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CATEGORIZATION OF ATMOSPHERIC TURBULENCE  
IN TERMS OF AIRCRAFT RESPONSE FOR USE IN  
TURBULENCE REPORTS AND FORECASTS



Structural Integrity Branch  
Structures and Dynamics Division

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This technical report has been reviewed and is approved for publication.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report describes a method of calculating the gust sensitivity of conventional aircraft and presents gust sensitivity values for a total of 69 military and civilian aircraft. Gust sensitivity is presented in terms of the vertical load factor response of aircraft per foot per second discrete gust.  The information is intended to permit organizations engaged in the forecasting of atmospheric turbulence to properly take into consideration the capability of particular aircraft to operate safely in various turbulence levels.		


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20. ABSTRACT (Cont'd)

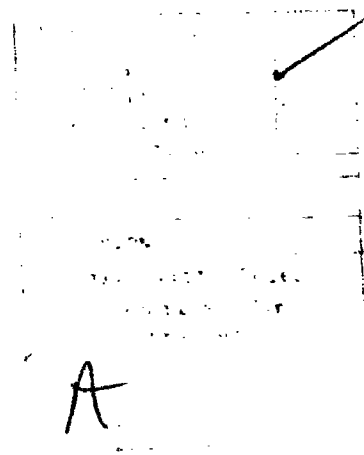
The basis for calculating the gust sensitivity is the so called "gust loads formula" which is a single degree of freedom mathematical model of the aircraft excited by a one-minus-cosine shaped wave form of 25 chord wave length. An empirical equation is used to calculate the aircraft normal force coefficient over the subsonic, transonic, and supersonic airspeed range.



FOREWORD

This report was prepared by Elijah W. Turner (AFWAL/FIBE), Aerospace Engineer in the Loads and Response Prediction Group of the Structures and Dynamics Division, and by Lt. Andy White and Lt. Jackie C. Sims, both in the Staff Meteorology Office, all being in the Flight Dynamics Laboratory at Wright-Patterson Air Force Base, Ohio. The work was conducted under Project 7500, Program Element 92iA to support Air Weather Service, Headquarters, Scott Air Force Base, Illinois in their effort to forecast turbulence.

This is a final report covering work accomplished between 1 January 1979 and 29 February 1980.



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## LIST OF SYMBOLS

AR	Aspect ratio
$\bar{c}$	Mean aerodynamic chord
$C_{L\alpha}$	Lift curve slope
g	Acceleration due to gravity
$K_g$	Gust alleviation factor
M	Mach number
$M^*$	Critical Mach number
n	Normal load factor
P	Pitot static pressure
$P_o$	Sea level static pressure
$P_t$	Pitot total pressure
S	Wing reference area
t	Time
$U_{de}$	Derived gust velocity
V	Aircraft true airspeed
$V_A$	True speed of sound
$V_c$	Calibrated airspeed
$V_e$	Equivalent airspeed
$V_g(t)$	Equivalent vertical gust velocity
$V_g$	Maximum equivalent vertical gust velocity
$V_i$	Instrument indicated airspeed
$V_I$	Instrument indicated airspeed corrected for instrument errors
W	Aircraft gross weight
$\Lambda_{.5\bar{c}}$	Sweep angle of 50% chord line
$\Delta$	Incremental value

LIST OF SYMBOLS (Concluded)

$\gamma$	Specific heat ratio $c_p/c_v$
$\lambda$	Taper ratio
$\mu$	Airplane mass ratio
$\pi$	3.14...
$\rho$	Density of air at flight altitude
$\rho_0$	Density of air at sea level
$\sigma$	Air density ratio



## SECTION I

### INTRODUCTION

Atmospheric turbulence is categorized as light, moderate, severe, and extreme. Each category is defined in terms which can be perceived by the pilot in terms of effects on the aircraft and objects in the aircraft. USAF Air Weather Service uses these categories when forecasting turbulence intensity for aircraft operations. The description of each category is presented in Table 1, which is reprinted from the Airman's Information Manual, Part 1. The significant aspect of these descriptions is that they are highly dependent on individual aircraft response characteristics.

With respect to flight safety, the effect of turbulence on the aircraft and pilot is considered to be the important aspect and not the turbulence intensity itself. In an effort to improve flight safety, USAF Air Weather Service identified a need to take into account the particular aircraft response characteristics in forecasting turbulence. Two particular applications are intended: (1) pilot reports of turbulence received from one type of aircraft are to be used to predict how the pilot of another type of aircraft will perceive the same turbulence, and (2) Air Weather Service is to present forecasted turbulence in a manner that will allow individual preflight briefers to interpret the turbulence in terms of the anticipated response of each particular aircraft type.

This report describes a method of determining the response of aircraft to turbulence and presents vertical load factor response as a function of derived gust velocity for a variety of aircraft. These results are intended to provide Air Weather Service with a method of easily determining aircraft response to a given intensity of turbulence. Methods of predicting turbulence intensity from geographic and meteorological data are not included.

TABLE 1 TURBULENCE REPORTING CRITERIA

TURBULENCE REPORTING CRITERIA			
INTENSITY	AIRCRAFT REACTION	REACTION INSIDE AIRCRAFT	REPORTING TERM-DEFINITION
Light	Turbulence that momentarily causes slight, erratic changes in altitude and/or attitude (pitch, roll, yaw). Report as <i>Light Turbulence</i> .*	Occupants may feel a slight strain against seat belts or shoulder straps. Unsecured objects may be displaced slightly. Food service may be conducted and little or no difficulty is encountered in walking.	Occasional - Less than 1/3 of the time.
	or Turbulence that causes slight, rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude. Report as <i>Light Chop</i> .		Intermittent - 1/3 to 2/3.
Moderate	Turbulence that is similar to Light Turbulence but of greater intensity. Changes in altitude and/or attitude occur but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed. Report as <i>Moderate Turbulence</i> .*	Occupants feel definite strains against seat belts or shoulder straps. Unsecured objects are dislodged. Food service and walking are difficult.	<b>NOTE</b> 1. Pilots should report location(s), time (GMT), intensity, whether in or near clouds, altitude, type of aircraft and, when applicable, duration of turbulence. 2. Duration may be based on time between two locations or over a single location. All locations should be readily identifiable. <b>EXAMPLES:</b> a. Over Omaha, 1232Z, Moderate Turbulence, in cloud, Flight Level 310, B707. b. From 50 miles south of Albuquerque to 30 miles north of Phoenix, 1210Z to 1250Z, occasional Moderate Chop, Flight Level 330, DC8.
	or Turbulence that is similar to Light Chop but of greater intensity. It causes rapid bumps or jolts without appreciable changes in aircraft altitude or attitude. Report as <i>Moderate Chop</i> .		
Severe	Turbulence that causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control. Report as <i>Severe Turbulence</i> .*	Occupants are forced violently against seat belts or shoulder straps. Unsecured objects are tossed about. Food service and walking are impossible.	
Extreme	Turbulence in which the aircraft is violently tossed about and is practically impossible to control. It may cause structural damage. Report as <i>Extreme Turbulence</i> .*		
* High level turbulence (normally above 15,000 feet ASL) not associated with cumulonimbus cloudiness, including thunderstorms, should be reported as CAT (clear air turbulence) preceded by the appropriate intensity, or light or moderate chop.			SC/AMS Meeting 7/67

## SECTION II

## AIRCRAFT RESPONSE TO TURBULENCE

There are a variety of procedures for calculating aircraft response to turbulence. They differ in the amount of effort required, and the accuracy generally increases with the complexity of the procedure. All of the procedures have in common the requirements for a mathematical model of the turbulence and a mathematical model of the aircraft. These two aspects are discussed to provide insight into the reason for adopting the particular technical approach in this report.

## 1. ATMOSPHERIC TURBULENCE MODELS

Both discrete and statistical turbulence models are currently used in aircraft design. Normally the simplest conservative model available is used unless the results indicate that the aircraft is gust critical. Gust critical aircraft warrant the use of a more precise gust model to prevent overdesign which tends to increase weight and decrease performance. Of the discrete gust models, the smoothly varying one-minus-cosine is considered to be a fairly realistic although idealized waveform. This waveform is in use today as well as actual measured time histories of gust velocity of particular interest. A one-minus-cosine gust with a wavelength of 25 times the mean aerodynamic chord normally produces the highest center of gravity vertical load factor for a given maximum vertical gust velocity. The gust velocity of a one-minus-cosine gust is:

$$V_g(t) = \frac{1}{2} V_g \left[ 1 - \text{Cosine} \left( \frac{2\pi V_e t}{25\bar{c}} \right) \right]$$

where:

- $\pi$  = 3.14159...
- $V_e$  = Equivalent airspeed of aircraft
- $\bar{c}$  = Mean aerodynamic chord
- $t$  = Time
- $V_g$  = Maximum vertical gust velocity
- $V_g(t)$  = Vertical gust velocity

There are a variety of statistical models for turbulence, the least complex of which is the Power Spectral Density (PSD) model. The PSD model assumes that turbulence is a stationary random process with mean square gust amplitudes given by a spectral function. The important aspect of the PSD gust model is that all frequencies of turbulence are represented, not just a single frequency as is the case with the one-minus-cosine gust. This becomes an advantage only if the aerodynamic model of the aircraft realistically predicts the response of the real aircraft as a function of frequency.

Other statistical models for turbulence drop either one or both of the assumptions that turbulence is stationary and Gaussian. These models are important in the analysis of aircraft response in turbulence fields whose statistical properties are rapidly varying and/or whose gust amplitudes do not follow a normal distribution. It is equally important (possibly more so) that the aerodynamic model for the aircraft be very realistic in order to gain any advantage from this more complex model of turbulence.

## 2. AERODYNAMIC MODELS OF AIRCRAFT

Mathematical models for the aircraft increase in complexity with the number of degrees of freedom (DOF). Vertical translation is the most important degree of freedom for analyzing aircraft response to turbulence and is always included. Pitch is the second most important degree of freedom and is included in analyses involving two or more degrees of freedom. For analysis of turbulence in the vertical plane, those degrees of freedom numbering more than two are usually flexible modes of vibration for the aircraft structure. The motion of the aircraft is represented by a linear sum of the motion of the aircraft in each of the degrees of freedom. The various combinations of aircraft and turbulence models that could effectively be used in this analysis are:

1. One-minus-cosine gust, single DOF aircraft
2. One-minus-cosine gust, two DOF aircraft
3. Power spectral gust, two DOF aircraft
4. Power spectral gust, multi-DOF aircraft

### SECTION III

#### TECHNICAL APPROACH

The most accurate approach to this problem would be to utilize the power spectral density technique (PSD) with a multi-degree of freedom aircraft. However, such an analysis is computationally more difficult than other approaches that may provide sufficient accuracy for the intended application. Thus the selected approach in this report is to utilize the so called "gust loads formula" that has been used successfully in design since about 1952. This formula gives the maximum vertical load factor response of a one degree of freedom aircraft to a one-minus-cosine gust whose wavelength is 25 times the mean aerodynamic chord and whose maximum amplitude is  $U_{de}$ . The gust loads formula is:

$$\Delta n = U_{de} \left[ \frac{K_g \rho_0 V_e C_{L\alpha}}{2 \frac{l}{S}} \right]$$

where:

$\Delta n$  = Maximum incremental center of gravity vertical load factor due to gust

$K_g = 0.88 \mu / (5.3 + \mu)$  = gust alleviation factor for subsonic speed

$= \mu^{1.03} / (6.95 + \mu^{1.03})$  = gust alleviation factor for supersonic speed

$\mu = 2 (W/S) / (\rho \bar{c} C_{L\alpha} g)$  = airplane mass ratio

$U_{de}$  = Derived gust velocity

$\rho$  = Density of air at flight altitude

$\rho_0$  = Density of air at sea level

$W$  = Aircraft gross weight

$S$  = Wing reference area

$\bar{c}$  = Mean aerodynamic chord

$g$  = Acceleration due to gravity

$V_e$  = Equivalent airspeed

$C_{L\alpha}$  = Aircraft lift curve slope at flight condition

This approach requires that categories of turbulence intensities be defined in terms of aircraft incremental vertical load factor response. Such a definition appears in the FORECASTING GUIDE ON TURBULENCE INTENSITY.

Light	0.2	<	$ \Delta n $	$\leq$	0.5
Moderate	0.5	<	$ \Delta n $	$\leq$	1.0
Severe	1.0	<	$ \Delta n $	$\leq$	2.0
Extreme	2.0	<	$ \Delta n $		

The assumption is made that flight safety is related more to the load factor response of the aircraft than it is to the actual gust intensity. This is considered a reasonable assumption. Aircraft with high wing and power loadings can safely operate in turbulence levels that would be dangerous for other aircraft, particularly light aircraft.

#### 1. IMPLICATIONS OF GUST LOADS FORMULA

The gust loads formula serves to relate the peak accelerations due to gust to be expected on a given airplane to the peak accelerations measured on another airplane for flight through the same rough air. The underlying concept is that a measured acceleration increment may be used to derive an effective gust velocity which in turn is used to calculate the acceleration on another airplane by reversing the process. The derived effective gust velocity,  $U_{de}$  is not, therefore, a direct physical quantity but is rather a gust-load transfer factor definable in terms of the formula. The gust alleviation factor,  $K_g$ , is a semi-empirical factor intended to account for the reduction in lift due to a number of factors. One of these factors is the motion of the aircraft in pitch and vertical translation. During the initial gust encounter, the aircraft pitches into the gust and translates with the gust. Both of these motions tend to decrease the angle of attack of the gust and thus alleviate the load factor. The motion of the aircraft in pitch is known to be a function of the aerodynamic pitching moment characteristics and the mass moment of inertia in pitch of the aircraft, neither of which are factors in the gust loads formula. Therefore the correction made using the factor  $K_g$  implies that on all aircraft the acceleration is affected by the motion of the aircraft to about the same degree; this assumption being reasonable

only for conventional aircraft having satisfactory flying qualities. This method is not suitable for all airplane configurations.

For a one-minus-cosine gust, the critical wavelength is approximately 25 times the length of the mean aerodynamic chord,  $25 \bar{c}$ . The critical wavelength is the wavelength that results in the highest acceleration for a given amplitude gust. Wavelengths significantly less than  $25 \bar{c}$  do not provide sufficient travel into the gust for circulation to become fully developed about the wing; thus the lift is not a maximum. At wavelengths significantly greater than  $25 \bar{c}$ , sufficient time is available for aircraft motion in pitch and vertical translation to decrease the angle of attack of the gust. Thus the critical wavelength is bounded and occurs in the range of  $25 \bar{c}$ .

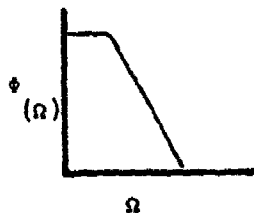
## 2. GUST AMPLITUDE VARIATION WITH AIRCRAFT SIZE

Use of the gust loads formula implies that turbulence contains gusts of the critical length for each aircraft, and that the amplitudes of the critical gusts are the same. This assumption is not entirely satisfactory when two aircraft of significantly different size are compared.

Consider the spectral content of turbulence. One of the best models for atmospheric turbulence is the von Karman spectrum:

$$\phi(\Omega) = \frac{\sigma^2 L}{\pi} \frac{1 + \frac{8}{3} (1.339 L \Omega)^2}{[1 + (1.339 L \Omega)^2]^{11/6}}$$

This formula describes how the average mean square gust amplitude,  $\phi$ , varies with respect to spacial frequency,  $\Omega$ . For a given scale of turbulence,  $L$ , and a given rms gust intensity,  $\sigma$ , the von Karman spectral equation has the following shape on a log normal plot:



The von Karman spectra shows a constant -5/3 slope after a knee in the curve. Whereas the gust wavelength,  $\lambda$ , is the inverse of the spacial frequency,  $\Omega$ , the gust wavelengths associated with the constant slope portion of the curve include all values less than 10,000 feet. Hence, the critical gust for all aircraft of practical consideration are associated with the constant slope portion of the curve.

It can be shown that the presence of the constant -5/3 slope implies that on a statistical basis there is a relation between gust amplitude,  $h$ , and wavelength,  $\lambda$ . This relation is:

$$\frac{h_2}{h_1} = \sqrt[3]{\frac{\lambda_2}{\lambda_1}}$$

Substituting the critical gust length of  $\lambda = 25\bar{c}$  for two different aircraft indicated by subscripts 1 and 2 gives the following equation:

$$\frac{h_2}{h_1} = \sqrt[3]{\frac{\bar{c}_2}{\bar{c}_1}}$$

Hence, for flight through turbulence having a von Karman spectral distribution, the larger aircraft is expected to encounter critical wavelength gusts of higher amplitude than the smaller aircraft. The ratio of the gust amplitudes is the cube root of the ratio of the mean aerodynamic chords of the two aircraft. Consider, for example, the largest and the smallest aircraft for which gust sensitivity is given in this report:

C-5A	$\bar{c} = 30.93$ feet
Cessna 172	$\bar{c} = 4.87$ feet

The ratio of the critical gust amplitudes is:

$$\frac{h_{C-5A}}{h_{Cessna\ 172}} = \sqrt[3]{\frac{30.93}{4.87}} = 1.85$$



The variation in the amplitude of critical gust with aircraft size has been taken into account by presenting gust amplitudes referenced to an aircraft of a particular size. A mean aerodynamic chord length of 12 feet was selected as being a median value of the aircraft considered in this report. The amplitude of the critical gust for each aircraft,  $U_{de}$ , is given in terms of the reference critical gust velocity,  $U_R$ , by the following equation:

$$U_{de} = U_R \sqrt[3]{\frac{c}{12}}$$

Substituting the right hand side of the foregoing equation into the gust loads formula gives:

$$\Delta n = U_R \sqrt[3]{\frac{c}{12}} \frac{K_g \rho_o V_e C_{L\alpha}}{2 \frac{W}{S}}$$

The coefficient of  $U_R$  is the gust sensitivity presented in this report:

$$\text{Gust Sensitivity} = \sqrt[3]{\frac{c}{12}} \frac{K_g \rho_o V_e C_{L\alpha}}{2 \frac{W}{S}}$$

### 3. LIFT CURVE SLOPE

In order to evaluate the gust loads formula, a value of the lift curve slope is required. During the detail design of an aircraft, aeroelastic analyses and wind tunnel tests provide aerodynamic data required for loads and performance calculations. This includes sufficient data to define the slope of the normal force coefficient, referred to as the lift curve slope. However, this data is too voluminous to be efficiently used in this report and it is not readily available for the large number of aircraft to be considered in this report. Therefore, empirical equations originally developed for use in preliminary design were used to define the lift curve slope as a continuous function over the subsonic, transonic and supersonic Mach number range in terms of the following parameters:

M	Mach number
AR	Aspect ratio

- $\Lambda_{.5c}$  Sweep angle of the 50% chord line of the wing  
 $\lambda$  Taper ratio of wing, equal to tip chord divided by root chord

One equation is used to cover the subsonic range up to a particular Mach number called the "critical Mach number" and another equation is used to cover the higher Mach number range. The so called critical Mach number,  $M^*$ , is given by:

$$M^* = M_0^* + (1 - M_0^*) (1 - \cos \Lambda_{.5c})^2$$

where:

$$M_0^* = (10 + 0.91 AR^3)/(10 + AR^3)$$

For Mach numbers less than or equal to the critical Mach number, the slope of the lift curve,  $C_{L\alpha}$ , is given by:

$$C_{L\alpha} = C_{L\alpha_1}$$

where

$$C_{L\alpha_1} = \frac{\pi AR}{1 + \sqrt{1 + ABS \left[ (1 - \cos \Lambda_{.5c})^{4/3} (M/M^*)^{8/3} (AR/2 \cos \Lambda_{.5c})^2 \right]}}$$

For Mach numbers greater than or equal to  $M^*$ ,  $C_{L\alpha}$  is given by:

$$C_{L\alpha} = \frac{1}{\left( \frac{1}{C_{L\alpha_1}} \right) \left( \frac{M^*}{M} \right)^2 + \frac{\beta}{4}}$$

where:

$$Z = M^* C_{La_1} + \frac{AR^2}{\left(\frac{3\pi AR}{C_{La_1}}\right)\left(\frac{\pi AR}{C_{La_1}} - 1\right) (\cos \Lambda_{.5c})^{2/3}}$$

$$\beta = (M - M^*) [1 + (M^*/M)^y]^2$$

$$y = \frac{1 + \pi AR}{3 + \pi AR} \left(2 - \frac{2}{3} \lambda - \lambda^2\right)$$

The foregoing equations were taken from Reference 1. The equations were evaluated for various combinations of Mach number, aspect ratio, taper ratio, and wing sweep. The results are presented in Figures 1 through 5 to demonstrate the reasonableness of the equations. Some anomalies are apparent. For example, in Figure 2 the plot for  $AR = 9$  and  $AR = 2$  have a reasonable shape whereas the plot for  $AR = 5$  has discontinuities in the slope of the curve. However, the values of the curves, including the curve for  $AR = 5$  are considered to be reasonable considering the purpose for which the equations were derived. The piece-wise continuous appearance is the result of the particular curve fitting used in assembling the equations. More precise empirical equations could be derived, but such work is beyond the scope of this report. The value of lift curve slope given by the equations was checked for two aircraft. The F-4E was evaluated between Mach numbers 0.70 and 1.80 (See Figure 41). The maximum error given by the equations when compared with test data was 15% at Mach number 1.8. The average error was 9%. The Boeing 707-100 was evaluated at Mach number 0.85 and the error was 12%.

#### 4. GUST ALLEVIATION FACTOR

The gust alleviation factor accounts for the reduction in load factor due to aircraft motion in pitch and vertical translation and also the reduction in lift due to the finite time required for lift to develop on

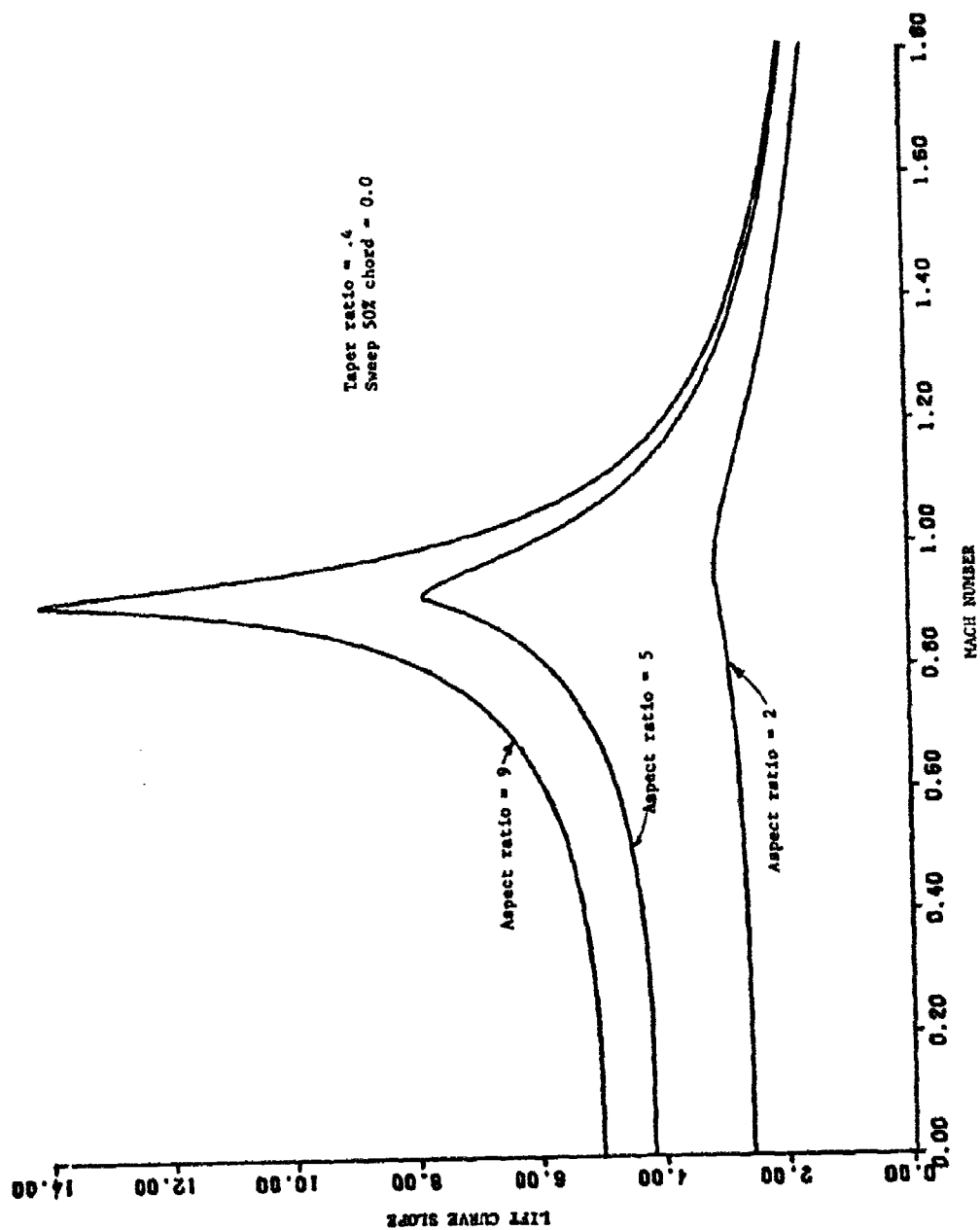


Figure 1. Effect of Aspect Ratio on Lift Curve Slope of Unswept Wings from Empirical Equation

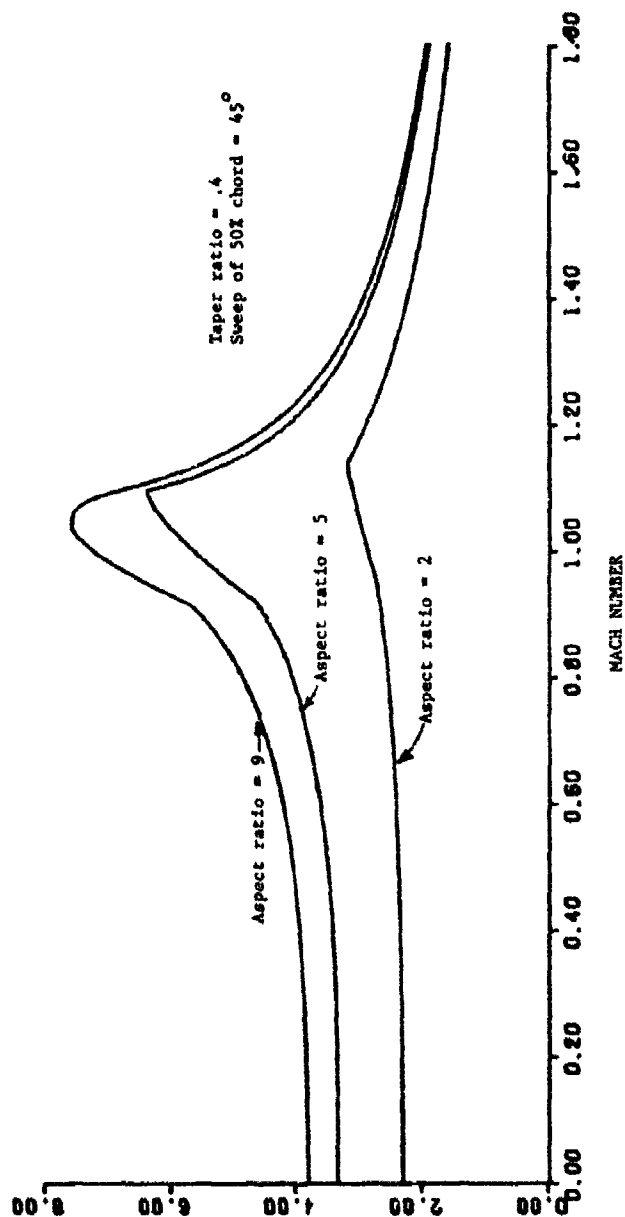


Figure 2. Effect of Aspect Ratio on Lift Curve Slope of Swept Wings from Empirical Equation

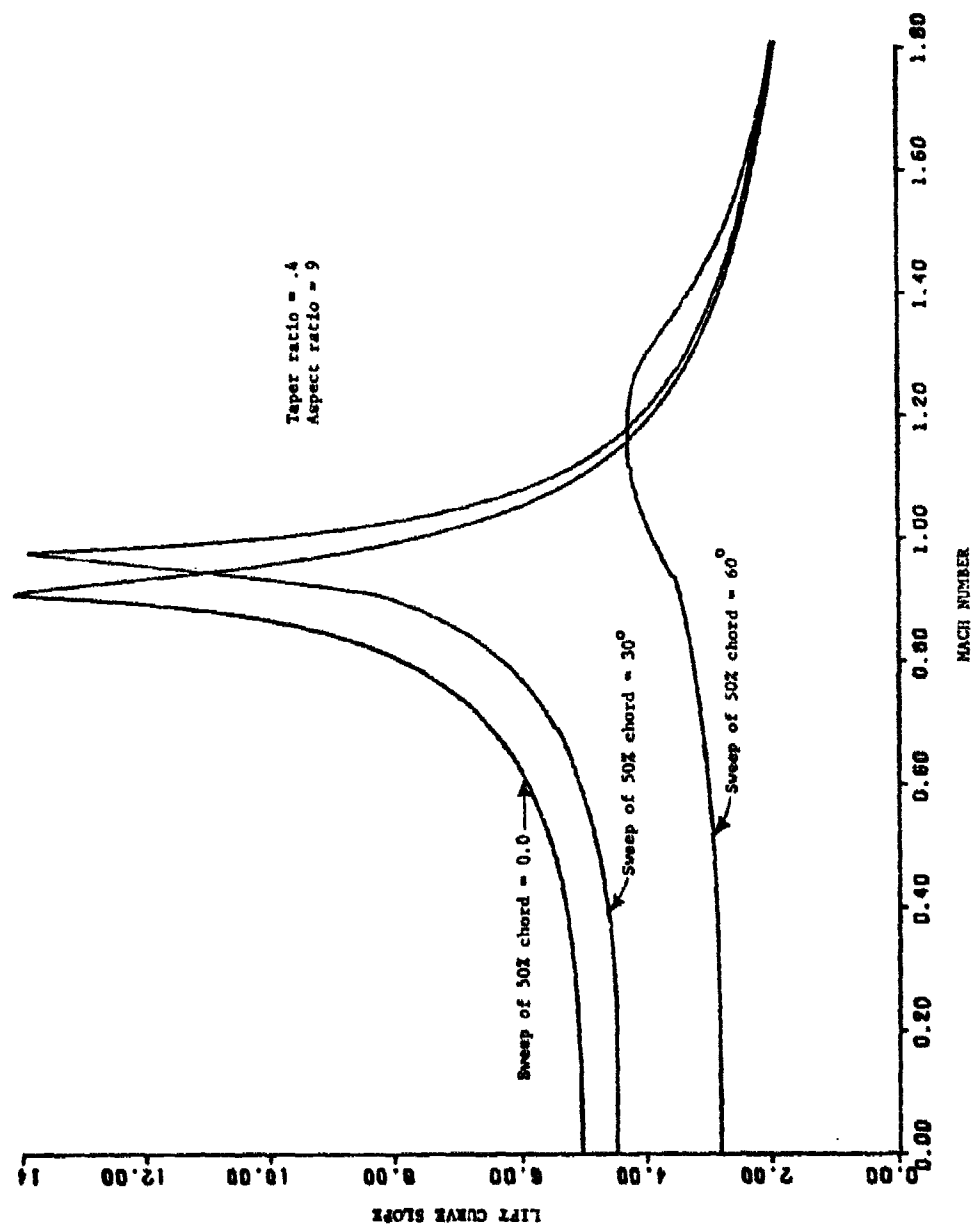


Figure 3. Effect of Sweep on Lift Curve Slope of High Aspect Ratio Wings from Empirical Equation

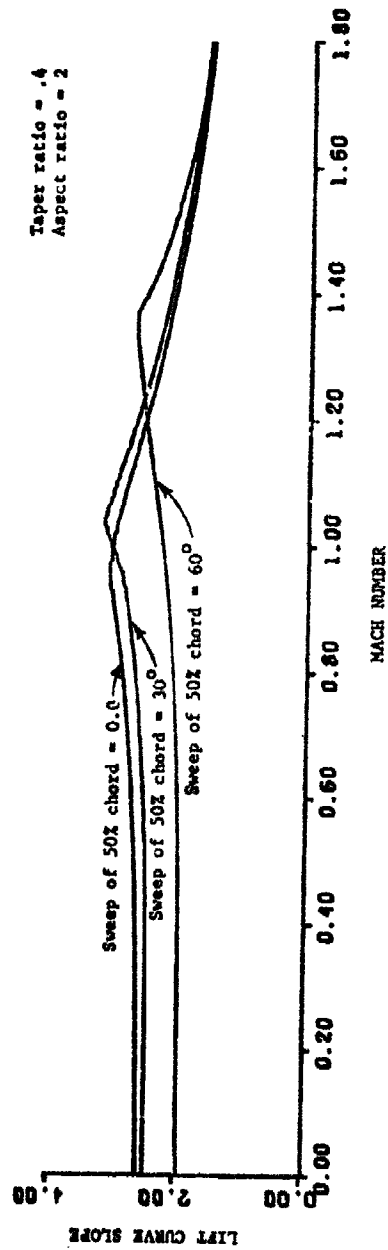


Figure 4. Effect of Sweep on Lift Curve Slope of Low Aspect Ratio Wings from Empirical Equation

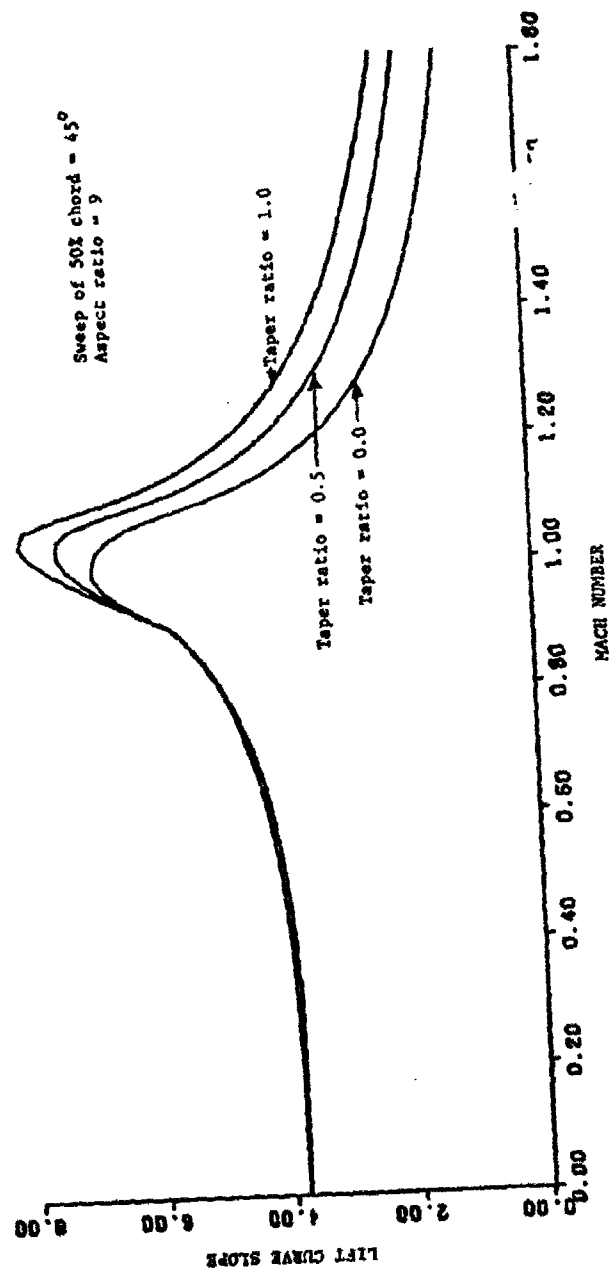


Figure 5. Effect of Taper Ratio on Lift Curve Slope of High Aspect Ratio Swept Wings from Empirical Equation



a wing following gust encounter (lift growth). Two expressions for  $K_g$  closely approximate the alleviation for subsonic flow and for supersonic flow respectively:

$$K_g = \frac{0.88\mu}{5.3 + \mu} \quad \text{SUBSONIC}$$

$$K_g = \frac{\mu^{1.03}}{6.95 + \mu^{1.03}} \quad \text{SUPERSONIC}$$

The alleviation for subsonic and supersonic flow differ by up to 11 percent, depending on the aircraft mass ratio,  $\mu$ . Neither of the expressions were developed with the intension of using them in the transsonic flow regime.

The objective of this report, however, requires analysis over the entire speed range of the various aircraft, including the transsonic range. In an effort to remove the discontinuity in the subsonic and supersonic expressions that occurs at Mach 1, the value of  $K_g$  was made to transition smoothly from the subsonic value to the supersonic value beginning 0.2 below the critical Mach number and ending 0.2 above the critical Mach number. Although there is no analytical basis for the form of the transition that was used, it is considered reasonable for this application because: (1) the magnitude of the discontinuity is small, and (2) flow about a wing normally begins to deviate from subsonic flow at approximately 0.2 below the critical Mach number as shock waves begin to form on the upper surface of the wing, and the flow is normally fully supersonic by 0.2 above the critical Mach number.

The following equations were used in the transition:

$$\theta = \frac{M - M^* + 0.2}{0.4} \pi$$

If  $\theta < 0.0$ , then let  $\theta = 0.0$

If  $\theta > \pi$ , then let  $\theta = \pi$

Therefore:

$$0.0 \leq \theta \leq \pi$$

$$K_g = K_{g\text{SUBSONIC}} \left( \frac{1 + \cos \theta}{2} \right) + K_{g\text{SUPERSONIC}} \left( \frac{1 - \cos \theta}{2} \right)$$

Figure 6 indicates the portions of the subsonic and the supersonic equations contributing to the value of  $K_g$  used in calculating the values of gust sensitivity presented in this report. The sum of the portions is identically one.

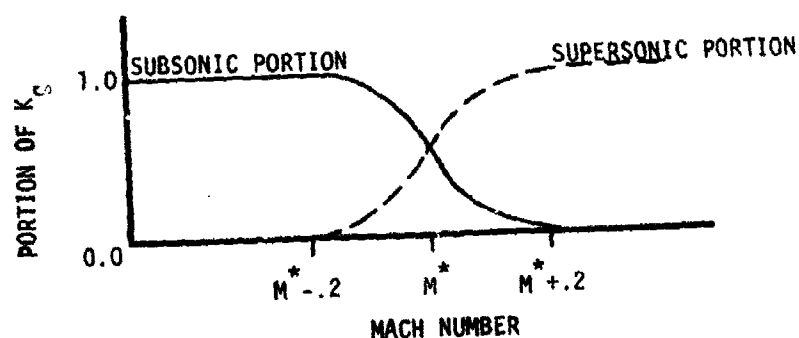


Figure 6. Portion of Subsonic and Supersonic Equations Contributing to Gust Alleviation Factor

## 5. AIRSPEED

There are a variety of different airspeeds, each of which is important from a different aspect. Since this report concerns both the engineering and operational aspects of aircraft, it is important to define a number of airspeeds and show how they are related.

$V_i$  is the instrument indicated airspeed which is read by the pilot. It is uncorrected for position error. It includes the sea level standard adiabatic compressible flow correction in the calibration of the airspeed instrument dial.

$V_I$  is the instrument indicated airspeed corrected for instrument error only. It is abbreviated IAS and is related to  $V_i$  by the following expression:

$$V_I = V_i + \Delta V_i$$

Where  $\Delta V_i$  is the instrument error correction

$V_C$  is calibrated airspeed and is equal to the airspeed indicator reading corrected for position and instrument error. The abbreviation for this airspeed is CAS and the equation relating  $V_C$  and  $V_I$  is:

$$V_C = V_I + \Delta V_p$$

Where  $\Delta V_p$  is the position error correction.

$V_e$  is the equivalent airspeed and is equal to the airspeed indicator reading corrected for position error, instrument error, and for adiabatic compressible flow for the particular altitude. The abbreviation for this airspeed is EAS and the relationship between  $V_C$  and  $V_e$  is:

$$V_e = V_C - \Delta V_c$$

Where  $\Delta V_c$  is the compressibility correction.

$V$  is true airspeed. It is related to  $V_e$  by the following:

$$V = V_e / \sqrt{\alpha}$$

Where  $\alpha$  is the density ratio  $\rho/\rho_0$ .

#### a. Calibrated Airspeed

The position error  $\Delta V_p$  and the instrument error  $\Delta V_i$  are small quantities which can vary from one aircraft to another. It is therefore not possible to account for these errors in this report. The tables in this report are presented in terms of calibrated airspeed,  $V_C$ . For modern aircraft with sensitive airspeed indicators, there is no significant loss of accuracy in neglecting position and instrument errors at normal flight speeds. It is suggested that indicated airspeed and calibrated be considered approximately equal:

$$V_i = V_C$$

For those rare circumstances when an aircraft is known to have significant position and/or instrument errors, they may be taken into account by the following equation:

$$V_c = V_i + \Delta V_i + \Delta V_p$$

### 3. EQUIVALENT AIRSPEED

The response of an aircraft to turbulence is directly proportional to the equivalent airspeed. Determination of gust sensitivity for various values of calibrated airspeed therefore requires the calculation of equivalent airspeed from calibrated airspeed. For the subsonic case ( $V \leq V_A$ ), the following equations are sufficient:

$$P_t - P = P_0 \left[ \left\{ 1 + \frac{\gamma - 1}{2} \left( \frac{V_c}{V_{A_0}} \right)^2 \right\}^{\frac{\gamma}{\gamma - 1}} - 1 \right] \quad (1)$$

$$V = V_A \sqrt{\frac{2}{\gamma - 1} \left[ \left\{ \frac{P_t - P}{P} + 1 \right\}^{\frac{\gamma - 1}{\gamma}} - 1 \right]} \quad (2)$$

$$V_e = V \sqrt{\frac{\rho}{\rho_0}} \quad (3)$$

Each equation is evaluated in turn and substituted into the next equation.

For the supersonic case ( $V \geq V_A$ ) a detached normal shock wave will form in front of the pitot tube and the effect of the shock must also be taken into account. Equation 1 is valid for both the supersonic and subsonic case, but Equation 2 must be replaced by the following equation:

$$P_t - P = P \left\{ \frac{\left[ \frac{\gamma + 1}{2} \left( \frac{V}{V_A} \right)^2 \right]^{\frac{\gamma}{\gamma - 1}}}{\left[ \frac{2\gamma}{\gamma + 1} \left( \frac{V}{V_A} \right)^2 - \frac{\gamma - 1}{\gamma + 1} \right]^{\frac{1}{\gamma - 1}}} - 1 \right\} \quad (4)$$

It is difficult to solve Equation 4 for  $V$  in terms of  $(P_t - P)$ . Therefore, a trial and error solution was used to solve for true airspeed from calibrated airspeed using Equations 1 and 4. Equation 3 is also valid for the supersonic case and was used to give the value of equivalent airspeed from true airspeed. A trial value of true airspeed was selected and substituted into Equation 4 to produce a corresponding trial value of  $(P_t - P)$ . The difference in the value of  $(P_t - P)$  as calculated from Equation 1 and the trial value from Equation 4 is a measure of the error in the trial value of  $V$ . Newton's method provided a rapid and systematic method of converging on the value of  $V$  which produces zero error. This method requires an evaluation of the first derivative of  $(P_t - P)$  with respect to  $V$  either by differentiation of Equation 4 or by finite difference methods. The first derivative is denoted by:

$$\frac{\partial(P_t - P)}{\partial V}$$

If  $V_1$  is a reasonable guess for  $V$ , then application of Newton's method gives a value of  $V_2$  which is an improved estimate of  $V$  according to the following equation:

$$V_2 = V_1 + \frac{\text{Error in } (P_t - P)}{\frac{\partial(P_t - P)}{\partial V}}$$

## SECTION IV

## INDIVIDUAL AIRCRAFT RESPONSE CALCULATIONS

The gust loads formula has been evaluated for each of a number of aircraft to give load factor response in terms of derived gust velocity. The plot for each aircraft is a straight line although the slopes vary. Figure 7 presents response curves varying from a slope of 0.005 to 0.150 g's per foot per second derived gust velocity. This covers the range of interest for the aircraft that have been considered.

A value of gust sensitivity is required in order to be able to use Figure 7. Table 2 lists all of the aircraft for which gust sensitivity has been evaluated in this report and gives the table in which this information is presented. For some aircraft, gust sensitivity is presented as a function of various parameters including gross weight, altitude, and airspeed. For other aircraft the gust sensitivity is presented as a function of only one of two of these parameters because the other parameters tend not to vary over a sufficient range to cause significant changes in gust sensitivity. For a few aircraft, a single value of gust sensitivity is presented.

The range of airspeed for which gust sensitivity is reported does not cover the entire flight envelope. At low speeds the effect of turbulence is to cause a possibility of loss of control due to stall. For this reason, the lowest speed for which gust sensitivity is reported approximates the recommended gust penetration speed. The highest speed for which gust sensitivity is reported is approximately the maximum cruise speed. Flight in turbulence at speeds above the maximum cruise is contrary to safe operating procedures and is therefore not considered in this report.

The extent to which the lift curve slope given by the empirical equation correctly represents the real aircraft is of considerable importance. Aircraft for which the gust sensitivity seems unreasonable should first be checked to see if the lift curve slope matches test data

for the particular aircraft. To facilitate this check, a plot of lift curve slope vs Mach number is presented in Appendix A for all of the aircraft considered in this report. If reasonable agreement is found between the empirical equation and the real aircraft, yet the gust sensitivity still seems unreasonable, then it should be concluded that the value of  $K_g$  is not reasonable for that aircraft. In this event, the only recourse is to a more complex analysis in which the stability of the aircraft is correctly represented. Such an analysis is beyond the scope of this report.

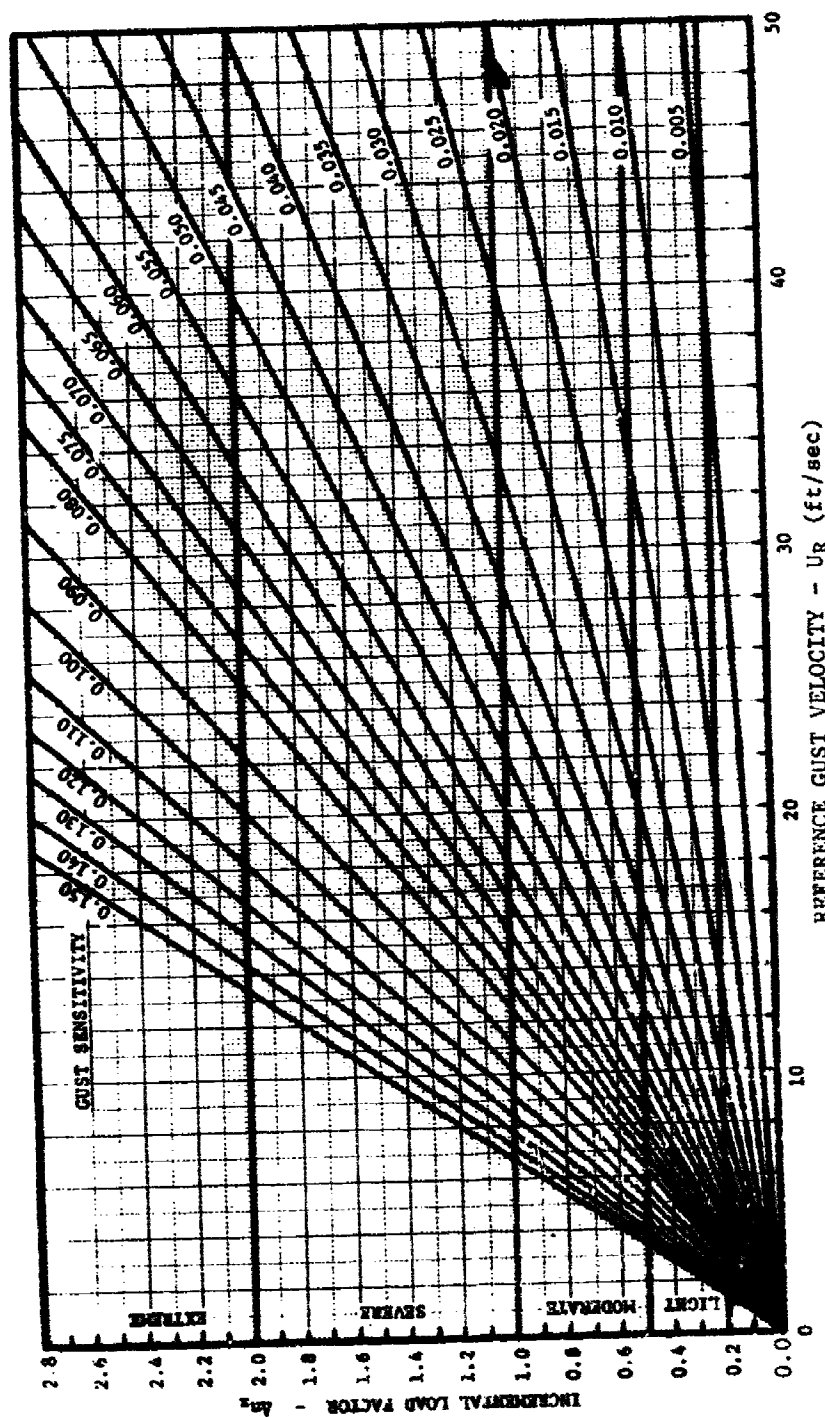


Figure 7.  $U_R$  vs  $\Delta n_z$  for Various Values of Gust Sensitivity



TABLE 2 GUST SENSITIVITY FOR VARIOUS AIRCRAFT AT TYPICAL FLIGHT CONDITIONS

AIRCRAFT	TABLE NO.	GUST SENSITIVITY	ALTITUDE	GROSS WEIGHT	CALIBRATED AIRSPEED	MACH NUMBER	TRUE AIRSPEED
			1000	1000			
			FT	LB	KNOTS		KNOTS
		$\frac{g}{FT/SEC}$					
A-7	3	.020	35	35	265	.781	450
A-10	4	.020	15	34	192	.383	240
B-52	5	.032	31	325	257	.699	410
BAC 1-11-200		.019	30	75	181	.492	290
BAC 1-11-400		.018	33	82	178	.516	300
BEECH V35B		.036	7	3.4	131	.225	145
BEECH E55		.033	7	5.3	153	.263	170
BEECH E90		.028	20	10.1	147	.326	200
BOEING 707-300		.032	30	300	303	.798	470
BOEING 727		.031	30	170	303	.798	470
BOEING 737		.027	30	100	282	.747	440
BOEING 747		.034	33	550	301	.842	490
BOEING 747SP		.027	39	660	267	.854	490
C-5A	6	.034	31	590	270	.733	430
C-9	7	.037	31	90	298	.801	470
C-130	8	.027	27	120	198	.503	300
C-141	9	.037	33	260	261	.739	430
CESSNA 150		.038	7	1.6	86	.147	95
CESSNA 172		.034	7	2.5	99	.170	110
CESSNA 175		.036	7	2.5	104	.178	115
CESSNA 180		.036	7	2.95	117	.201	130
CESSNA 182		.036	7	2.95	117	.201	130
CESSNA 205		.034	7	3.3	122	.209	135
CESSNA 210		.034	7	3.8	135	.232	150
CESSNA 310		.028	7	5.5	153	.263	170
CESSNA 401, 402		.029	7	6.3	162	.279	180
CONVAIR 440, 330		.029	23	48	183	.428	260
DC-8-50, 61		.032	36	280	266	.802	460
DC-8-62, 63		.032	36	300	266	.802	460
DC-9-10		.031	32	86	279	.770	450
DC-9-30, 40, 50		.029	32	100	279	.770	450
DC-10-10		.027	36	400	276	.828	475
DC-10-20		.026	36	480	276	.828	475

TABLE 2 (Concluded)  
GUST SENSITIVITY FOR VARIOUS AIRCRAFT  
AT TYPICAL FLIGHT CONDITIONS

AIRCRAFT	TABLE NO.	GUST SENSITIVITY	ALTITUDE 1000	GROSS WEIGHT 1000	CALIBRATED AIRSPEED	MACH NUMBER	TRUE AIRSPEED
		$\frac{g}{ft/sec}$	FT	LB	KNOTS		KNOTS
F-4	10	.020	31	50	305	.818	480
F-15	11	.033	36	42	306	.906	520
F-16	12	.031	25	25	383	.897	540
F-106	13	.035	37	38	305	.924	530
F-111 @ 16°	14	.027	25	70	336	.797	480
F-111 @ 26°	15						
F-111 @ 50°	16						
F-111 @ 72°	17						
FALCON 10		.046	35	16	291	.850	490
FALCON 50		.046	35	33.2	291	.850	490
FB-111 @ 16°	18	.026	38	70	267	.837	480
FB-111 @ 26°	19						
FB-111 @ 50°	20						
FB-111 @ 72°	21						
FJF 20 C, D, E		.044	30	26	304	.799	471
KC-135	22	.030	33	220	274	.774	450
LEAR JET 23,24,25		.023	35	13.5	202	.607	350
LEAR JET 36		.020	35	18	202	.607	350
T-34	23						
T-37	24	.025	15	11	241	.479	300
T-38	25	.032	33	13	322	.394	520
T-39A	26	.043	35	16	258	.763	440
T-41	27						
VC 140		.039	35	32	271	.798	460
O-2	27	.027	10	4.2	103	.188	120
OV-10	27	.026	10	10	155	.282	180

TABLE 3 GUST SENSITIVITY OF A-7

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: A-7

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.020	.024	.028	.033	.038	.043	.048	.053	.058	.063	.067	.070	.072	.075	.078	.081
25000.	.017	.020	.024	.027	.031	.036	.040	.045	.050	.055	.058	.060	.062	.065	.068	.071
30000.		.017	.020	.023	.027	.030	.034	.038	.044	.047	.048	.051	.053	.056	.058	.061
35000.		.015	.017	.020	.023	.026	.030	.034	.038	.041	.043	.045	.046	.048	.050	.052
40000.			.015	.018	.021	.023	.026	.030	.034	.037	.038	.040	.041	.043	.045	.047

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.021	.026	.030	.035	.041	.047	.054	.058	.064	.070	.074	.078	.084	.091	.097	.103
25000.	.017	.021	.025	.029	.033	.038	.044	.048	.053	.058	.061	.064	.067	.070	.073	.076
30000.		.018	.021	.024	.028	.032	.036	.041	.045	.049	.052	.055	.058	.061	.064	.067
35000.		.015	.018	.021	.024	.028	.033	.038	.043	.047	.049	.051	.053	.055	.057	.059
40000.			.016	.019	.021	.025	.028	.031	.034	.038	.040	.042	.045	.048	.050	.052

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.022	.028	.032	.037	.043	.049	.056	.061	.067	.073	.078	.084	.091	.097	.103	.109
25000.		.021	.024	.027	.031	.035	.039	.044	.048	.053	.058	.061	.064	.067	.070	.073
30000.		.017	.020	.023	.026	.029	.033	.037	.041	.045	.049	.052	.055	.058	.061	.064
35000.			.017	.020	.022	.024	.026	.028	.032	.034	.036	.038	.040	.042	.044	.046
40000.			.015	.017	.020	.021	.023	.026	.028	.030	.032	.034	.037	.041	.045	.049

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.023	.029	.033	.038	.044	.050	.057	.062	.068	.074	.080	.086	.092	.098	.104	.110
25000.		.020	.023	.026	.029	.033	.037	.041	.045	.049	.053	.057	.061	.064	.067	.070
30000.			.019	.021	.023	.025	.028	.031	.034	.037	.040	.043	.046	.048	.050	.052
35000.				.018	.020	.021	.023	.024	.026	.027	.029	.031	.033	.034	.036	.038
40000.					.018	.019	.020	.021	.022	.024	.026	.028	.029	.030	.032	.034

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.024	.030	.034	.039	.045	.051	.058	.064	.070	.076	.082	.088	.094	.100	.106	.112
25000.		.021	.022	.023	.025	.027	.029	.031	.033	.035	.037	.039	.041	.043	.045	.047
30000.			.020	.021	.023	.025	.027	.028	.030	.032	.034	.036	.038	.040	.042	.044
35000.					.020	.021	.023	.024	.025	.026	.028	.029	.031	.032	.034	.035
40000.						.021	.023	.024	.025	.026	.028	.029	.031	.032	.034	.035

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	200.	240.	280.	320.	360.	400.	440.	480.	520.	560.	600.	640.	680.	720.	760.	800.
20000.	.027	.033	.037	.042	.048	.054	.061	.067	.073	.079	.085	.091	.097	.103	.109	.115
25000.		.025	.026	.027	.029	.031	.033	.035	.037	.039	.041	.043	.045	.047	.049	.051
30000.			.024	.025	.026	.028	.030	.032	.034	.036	.038	.040	.042	.044	.046	.048

TABLE 4 GUST SENSITIVITY OF A-10

GUST SENSITIVITY (G'S/FT/SEC GUST)		AIRCRAFT TYPE: A-10															
		ALTITUDE: 0. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		200.	220.	240.	260.	280.	300.	320.	330.	340.	350.	360.	370.	380.	390.		
20000.		.032	.033	.038	.042	.045	.048	.053	.055	.057	.058	.061	.063	.065	.067		
25000.		.026	.028	.032	.035	.038	.041	.044	.045	.047	.049	.050	.052	.054	.056		
30000.		.022	.025	.027	.030	.032	.035	.037	.038	.040	.042	.043	.045	.046	.048		
35000.		.022	.025	.027	.030	.032	.035	.037	.038	.040	.042	.043	.045	.046	.048		
40000.		.018	.021	.023	.025	.027	.028	.030	.031	.032	.033	.033	.035	.036	.037		
45000.		.018	.021	.023	.025	.027	.028	.030	.031	.032	.033	.033	.035	.036	.037		
		ALTITUDE: 10000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		200.	220.	240.	260.	280.	300.	320.	330.	340.	350.	360.	370.	380.	390.		
20000.		.033	.037	.041	.044	.048	.053	.057	.058	.062	.064	.067	.069	.072	.075		
25000.		.027	.030	.033	.037	.040	.043	.047	.048	.051	.053	.055	.057	.060	.062		
30000.		.023	.026	.028	.031	.034	.037	.040	.042	.043	.045	.047	.048	.051	.053		
35000.		.022	.025	.027	.029	.032	.035	.036	.038	.040	.041	.043	.044	.046	.048		
40000.		.020	.022	.024	.026	.028	.031	.032	.033	.035	.036	.038	.039	.041	.043		
45000.		.020	.022	.024	.026	.028	.031	.032	.033	.035	.036	.038	.039	.041	.043		
		ALTITUDE: 20000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		200.	220.	240.	260.	280.	300.	320.	330.	340.	350.	360.	370.	380.	390.		
20000.		.035	.038	.043	.045	.048	.050	.052	.055	.056	.058	.059	.061	.062	.064		
25000.		.028	.032	.035	.037	.039	.041	.043	.045	.046	.047	.048	.050	.051	.052		
30000.		.024	.027	.030	.031	.033	.035	.036	.038	.039	.040	.041	.042	.043	.044		
35000.		.023	.026	.028	.029	.031	.033	.034	.035	.036	.037	.038	.039	.040	.041		
40000.		.021	.023	.024	.025	.027	.028	.029	.030	.031	.031	.031	.032	.033	.034		
45000.		.021	.023	.024	.025	.027	.028	.029	.030	.031	.031	.031	.032	.033	.034		
		ALTITUDE: 30000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		200.	205.	210.	215.	220.	225.	230.	235.	240.	245.	250.	255.	260.			
20000.		.037	.038	.040	.041	.042	.043	.045	.046	.047	.048	.050	.052	.053			
25000.		.030	.031	.032	.033	.034	.035	.036	.037	.038	.040	.041	.042	.043			
30000.		.026	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037			
35000.		.026	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037			
40000.		.023	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034			
45000.		.023	.023	.024	.025	.026	.027	.028	.029	.030	.031	.032	.033	.034			

TABLE 5 GUST SENSITIVITY OF B-52

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: B-52

WEIGHT	ALTITUDE: 0. FEET											
	CALIBRATED AIRSPEED (KNOTS CAS)											
	220.	260.	300.	340.	380.	420.	440.	460.	480.	500.	510.	520.
200000.	.030	.036	.042	.048	.054	.060	.067	.072	.078	.081	.084	.087
225000.	.028	.033	.039	.045	.051	.058	.062	.068	.070	.075	.078	.081
250000.	.026	.031	.038	.042	.048	.054	.058	.061	.065	.070	.072	.075
275000.	.024	.028	.034	.039	.044	.050	.054	.057	.061	.065	.068	.070
300000.	.023	.027	.031	.036	.041	.047	.050	.054	.057	.061	.063	.066
325000.	.021	.025	.030	.034	.039	.044	.047	.050	.054	.058	.060	.063
350000.		.024	.028	.032	.037	.042	.045	.048	.051	.055	.057	.061
375000.		.022	.026	.030	.035	.040	.042	.045	.048	.052	.054	.058
400000.		.021	.025	.029	.033	.038	.040	.043	.046	.049	.051	.055
425000.		.020	.024	.027	.031	.036	.038	.041	.044	.047	.049	.053
450000.		.018	.023	.026	.030	.034	.036	.039	.042	.045	.048	.050
475000.			.022	.025	.029	.033	.035	.037	.040	.043	.046	.050
WEIGHT	ALTITUDE: 10000. FEET											
	CALIBRATED AIRSPEED (KNOTS CAS)											
	220.	240.	260.	280.	300.	320.	340.	360.	380.	400.	410.	420.
200000.	.033	.038	.040	.043	.047	.051	.054	.058	.063	.068	.071	.075
225000.	.030	.033	.038	.040	.043	.048	.050	.054	.058	.062	.065	.070
250000.	.028	.031	.033	.038	.039	.043	.046	.049	.053	.057	.060	.065
275000.	.026	.028	.031	.034	.037	.039	.043	.046	.049	.053	.056	.060
300000.	.024	.026	.029	.031	.034	.037	.040	.043	.046	.050	.052	.056
325000.		.025	.027	.029	.032	.034	.037	.040	.043	.047	.049	.053
350000.		.023	.025	.028	.030	.032	.035	.038	.041	.044	.046	.050
375000.		.022	.024	.026	.028	.031	.033	.036	.038	.041	.043	.047
400000.			.023	.025	.027	.029	.031	.034	.036	.038	.041	.044
425000.			.021	.023	.025	.027	.030	.032	.035	.037	.039	.042
450000.			.020	.022	.024	.026	.028	.030	.033	.035	.037	.040
475000.				.021	.023	.025	.027	.029	.031	.034	.035	.038
WEIGHT	ALTITUDE: 20000. FEET											
	CALIBRATED AIRSPEED (KNOTS CAS)											
	220.	240.	260.	280.	300.	320.	340.	360.	380.	400.	410.	420.
200000.	.038	.040	.044	.048	.052	.055	.057	.060	.062	.065	.068	.072
225000.	.033	.038	.040	.043	.047	.050	.052	.054	.057	.060	.063	.068
250000.	.030	.033	.038	.040	.044	.048	.048	.050	.052	.055	.058	.061
275000.	.028	.030	.033	.037	.040	.042	.044	.046	.048	.051	.053	.056
300000.	.026	.028	.031	.034	.037	.039	.041	.043	.045	.047	.050	.052
325000.		.026	.028	.032	.035	.036	.038	.040	.042	.044	.046	.050
350000.		.025	.027	.030	.033	.034	.036	.037	.039	.041	.043	.047
375000.		.023	.026	.028	.031	.032	.034	.035	.037	.038	.041	.044
400000.			.024	.027	.029	.030	.032	.033	.035	.037	.038	.041
425000.			.023	.025	.028	.029	.030	.032	.033	.035	.037	.040
450000.				.024	.026	.027	.028	.030	.031	.033	.035	.038
475000.				.023	.025	.026	.027	.028	.030	.032	.033	.036
WEIGHT	ALTITUDE: 30000. FEET											
	CALIBRATED AIRSPEED (KNOTS CAS)											
	220.	230.	240.	250.	255.	260.	265.	270.	275.	280.	285.	290.
200000.	.038	.042	.044	.048	.048	.050	.052	.053	.055	.058	.058	.060
225000.	.035	.038	.040	.042	.043	.044	.045	.047	.048	.050	.051	.053
250000.	.032	.034	.036	.038	.038	.040	.042	.043	.044	.045	.047	.050
275000.	.030	.031	.033	.035	.036	.037	.038	.039	.040	.042	.043	.045
300000.	.028	.029	.031	.033	.033	.034	.035	.036	.037	.038	.040	.041
325000.		.027	.028	.030	.031	.032	.033	.034	.035	.036	.037	.038
350000.			.027	.028	.029	.030	.031	.032	.033	.034	.035	.036
375000.				.027	.027	.028	.029	.030	.031	.032	.033	.034
400000.					.026	.027	.028	.029	.030	.031	.032	.033
425000.						.026	.027	.027	.028	.029	.030	.031
450000.							.025	.026	.027	.028	.029	.030
475000.								.025	.026	.027	.028	.029
WEIGHT	ALTITUDE: 40000. FEET											
	CALIBRATED AIRSPEED (KNOTS CAS)											
	220.	225.	230.	235.	240.							
200000.	.045	.048	.048	.050	.052							
225000.	.040	.042	.043	.045	.047							
250000.	.037	.038	.040	.041	.043							
275000.	.034	.035	.036	.038	.038							
300000.		.032	.034	.035	.036							
325000.				.032	.034							

TABLE 6 GUST SENSITIVITY OF C-5A

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: C-5A

ALTITUDE: 0. FEET		CALIBRATED AIRSPEED (KNOTS CAS)															
HEIGHT	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380
325000.	.030	.033	.036	.044	.048	.054	.058	.063	.067	.071	.074	.078	.081	.084	.087	.091	.094
350000.	.029	.033	.036	.042	.047	.051	.057	.060	.064	.068	.071	.073	.075	.078	.081	.084	.087
375000.	.028	.032	.036	.040	.045	.048	.054	.058	.061	.065	.068	.070	.072	.075	.078	.081	.084
400000.	.027	.030	.034	.038	.043	.047	.052	.055	.058	.062	.065	.067	.069	.072	.075	.078	.081
425000.	.026	.029	.033	.037	.041	.045	.050	.053	.057	.060	.062	.064	.067	.069	.072	.075	.078
450000.	.024	.028	.032	.035	.038	.044	.048	.051	.055	.058	.060	.062	.064	.067	.069	.072	.075
475000.	.024	.027	.030	.034	.038	.042	.046	.048	.052	.055	.058	.060	.062	.064	.066	.068	.071
500000.	.023	.026	.029	.033	.037	.040	.044	.048	.051	.054	.058	.060	.062	.064	.066	.068	.071
525000.	.022	.025	.028	.032	.035	.038	.042	.045	.048	.051	.054	.057	.060	.062	.064	.066	.068
550000.	.021	.024	.027	.031	.034	.038	.041	.044	.047	.051	.053	.056	.058	.061	.063	.065	.068
575000.	.021	.024	.026	.030	.033	.036	.040	.043	.046	.048	.051	.053	.056	.058	.061	.063	.065
600000.	.020	.023	.026	.029	.032	.035	.038	.041	.044	.046	.048	.051	.053	.056	.058	.061	.063
625000.	.019	.022	.025	.028	.031	.034	.037	.040	.043	.045	.048	.050	.053	.055	.058	.060	.062
650000.	.018	.021	.024	.027	.030	.033	.036	.039	.042	.044	.046	.048	.051	.053	.056	.058	.061
675000.	.017	.020	.023	.026	.029	.032	.035	.038	.041	.043	.045	.047	.050	.052	.055	.057	.060
700000.	.016	.019	.022	.025	.028	.031	.034	.037	.040	.042	.044	.046	.048	.051	.053	.056	.058
725000.	.015	.018	.021	.024	.027	.030	.033	.036	.039	.041	.043	.045	.047	.050	.052	.055	.057
750000.	.014	.017	.020	.023	.026	.029	.032	.035	.038	.040	.042	.044	.046	.048	.051	.053	.056
775000.	.013	.016	.019	.022	.025	.028	.031	.034	.037	.039	.041	.043	.045	.047	.050	.052	.055
ALTITUDE: 10000. FEET		CALIBRATED AIRSPEED (KNOTS CAS)															
HEIGHT	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380
325000.	.034	.036	.044	.048	.052	.058	.063	.068	.072	.075	.078	.081	.084	.087	.091	.094	.097
350000.	.032	.037	.042	.046	.050	.055	.060	.064	.068	.071	.074	.077	.081	.084	.087	.091	.094
375000.	.031	.035	.040	.044	.047	.050	.054	.058	.063	.066	.069	.071	.074	.077	.081	.084	.087
400000.	.029	.033	.038	.041	.044	.048	.052	.056	.060	.063	.066	.069	.071	.074	.077	.081	.084
425000.	.028	.032	.036	.039	.043	.046	.050	.053	.057	.060	.062	.065	.068	.071	.074	.077	.081
450000.	.027	.031	.035	.038	.041	.044	.047	.051	.054	.057	.060	.062	.065	.068	.071	.074	.077
475000.	.026	.029	.033	.036	.039	.042	.046	.048	.052	.055	.058	.060	.062	.065	.068	.071	.074
500000.	.025	.028	.032	.035	.038	.041	.044	.048	.051	.054	.058	.060	.062	.065	.068	.071	.074
525000.	.024	.027	.031	.034	.037	.040	.043	.046	.049	.051	.054	.057	.059	.062	.064	.067	.070
550000.	.023	.026	.030	.033	.036	.039	.042	.045	.048	.050	.053	.056	.058	.061	.063	.065	.068
575000.	.022	.025	.029	.032	.035	.038	.041	.044	.047	.049	.052	.054	.057	.059	.062	.064	.067
600000.	.021	.024	.028	.031	.034	.037	.040	.043	.046	.048	.051	.053	.056	.058	.061	.063	.065
625000.	.020	.023	.027	.030	.033	.036	.039	.042	.045	.047	.050	.052	.055	.057	.060	.062	.065
650000.	.019	.022	.026	.029	.032	.035	.038	.041	.044	.046	.049	.051	.054	.056	.059	.061	.064
675000.	.018	.021	.025	.028	.031	.034	.037	.040	.043	.045	.048	.050	.053	.055	.058	.060	.063
700000.	.017	.020	.024	.027	.030	.033	.036	.039	.042	.044	.047	.049	.052	.054	.057	.059	.062
725000.	.016	.019	.023	.026	.029	.032	.035	.038	.041	.043	.046	.048	.051	.053	.056	.058	.061
750000.	.015	.018	.022	.025	.028	.031	.034	.037	.040	.042	.045	.047	.050	.052	.055	.057	.060
775000.	.014	.017	.021	.024	.027	.030	.033	.036	.039	.041	.044	.046	.049	.051	.054	.056	.059
ALTITUDE: 20000. FEET		CALIBRATED AIRSPEED (KNOTS CAS)															
HEIGHT	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380
325000.	.037	.041	.045	.050	.054	.059	.063	.068	.072	.075	.078	.081	.084	.087	.091	.094	.097
350000.	.036	.040	.044	.048	.052	.056	.060	.064	.068	.071	.074	.077	.081	.084	.087	.091	.094
375000.	.035	.039	.043	.047	.051	.055	.059	.063	.067	.070	.073	.076	.079	.082	.085	.088	.091
400000.	.034	.038	.042	.046	.050	.054	.058	.062	.066	.069	.072	.075	.078	.081	.084	.087	.090
425000.	.033	.037	.041	.045	.049	.053	.057	.061	.065	.068	.071	.074	.077	.080	.083	.086	.089
450000.	.032	.036	.040	.044	.048	.052	.056	.060	.064	.067	.070	.073	.076	.079	.082	.085	.088
475000.	.031	.035	.039	.043	.047	.051	.055	.059	.063	.066	.069	.072	.075	.078	.081	.084	.087
500000.	.030	.034	.038	.042	.046	.050	.054	.058	.062	.065	.068	.071	.074	.077	.080	.083	.086
525000.	.029	.033	.037	.041	.045	.049	.053	.057	.061	.064	.067	.070	.073	.076	.079	.082	.085
550000.	.028	.032	.036	.040	.044	.048	.052	.056	.060	.063	.066	.069	.072	.075	.078	.081	.084
575000.	.027	.031	.035	.039	.043	.047	.051	.055	.059	.062	.065	.068	.071	.074	.077	.080	.083
600000.	.026	.030	.034	.038	.042	.046	.050	.054	.058	.061	.064	.067	.070	.073	.076	.079	.082
625000.	.025	.029	.033	.037	.041	.045	.049	.053	.057	.060	.063	.066	.069	.072	.075	.078	.081
650000.	.024	.028	.032	.036	.040	.044	.048	.052	.056	.059	.062	.065	.068	.071	.074	.077	.080
675000.	.023	.027	.031	.035	.039	.043	.047	.051	.055	.058	.061	.064	.067	.070	.073	.076	.079
700000.	.022	.026	.030	.034	.038	.042	.046	.050	.054	.057	.060	.063	.066	.069	.072	.075	.078
725000.	.021	.025	.029	.033	.037	.041	.045	.049	.053	.056	.059	.062	.065	.068	.071	.074	.077
750000.	.020	.024	.028	.032	.036	.040	.044	.048	.052	.055	.058	.061	.064	.067	.070	.073	.076
775000.	.019	.023	.027	.031	.035	.039	.043	.047	.051	.054	.057	.060	.063	.066	.069	.072	.075
ALTITUDE: 30000. FEET		CALIBRATED AIRSPEED (KNOTS CAS)															
HEIGHT	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380
325000.	.041	.044	.048	.052	.056	.060	.064	.068	.072	.075	.078	.081	.084	.087	.091	.094	.097
350000.	.039	.043	.047	.051	.055	.059	.063	.067	.071	.074	.077	.080	.083	.086	.089	.092	.095
375000.	.037	.041	.045	.049	.053	.057	.061	.065	.069	.072	.075	.078	.081	.084	.087	.090	.093
400000.	.036	.040	.044	.048	.052	.056	.060	.064	.068	.071	.074	.077	.080	.083	.086	.089	.092
425000.	.035	.039	.043	.047	.051	.055	.059	.063	.067	.070	.073	.076	.079	.082	.085	.088	.091
450000.	.034	.038	.042	.046	.050	.054	.058	.062	.066	.069	.072	.075	.078	.081	.084	.087	.090
475000.	.033	.037	.041	.045	.049	.053	.057	.061	.065	.068	.071	.074	.077	.080	.083	.086	.089
500000.	.032	.036	.040	.044	.048	.052	.056	.060	.064	.067	.070	.073	.076	.079	.082	.085	.088
525000.	.031	.035	.039	.043	.047	.051	.055	.059	.063	.066	.069	.072	.075	.078	.081	.084	.087
550000.	.030	.034	.038	.042	.046	.050	.054	.058	.062	.065	.068	.071	.074	.077	.080	.083	.086
575000.	.029	.033	.037	.041	.045	.049	.053	.057	.061	.064	.067	.070	.073	.076	.079	.082	.085
600000.	.028	.032	.036	.040	.044	.048	.052	.056	.060	.063	.066	.069	.072	.075	.078	.081	.084
625000.	.027	.031	.035	.039	.043	.047	.051	.055	.059	.062	.065	.068	.071	.074	.077	.080	.083
650000.	.026	.030	.034	.038	.042	.046	.050	.054	.058	.061	.064	.067	.070	.073	.076	.079	.082
675000.	.025	.029	.033	.037	.041	.045	.049	.053	.057	.060	.063	.066	.069	.072	.075	.078	.081
700000.	.024	.028	.032	.036	.040	.044	.048	.052	.056	.059	.062	.065	.068	.071	.074	.077	.080
725000.	.023	.027	.031	.035	.039	.043	.047	.051	.055	.058	.061	.064	.067	.070	.073	.076	.079
750000.	.022	.026	.030	.034	.038	.042	.046	.050	.054	.057	.060	.063	.066	.069			

TABLE 7 GUST SENSITIVITY OF C-9

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: C-9

		ALTITUDE: 0. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	260.	300.	340.	380.	420.	460.	480.	500.	520.	540.	560.	570.	580.		
50000.		.031	.037	.043	.050	.057	.065	.075	.081	.087	.085	.104	.115	.121	.128		
60000.		.028	.031	.037	.043	.048	.056	.065	.070	.075	.082	.080	.100	.106	.113		
70000.		.023	.028	.032	.038	.043	.050	.057	.061	.067	.073	.060	.088	.095	.101		
80000.		.021	.025	.029	.033	.039	.044	.051	.055	.060	.065	.072	.080	.085	.091		
90000.		.022	.028	.030	.035	.040	.046	.050	.054	.058	.065	.065	.073	.077	.083		
100000.		.020	.024	.027	.032	.036	.042	.045	.049	.054	.058	.067	.071	.076			
110000.		.018	.022	.025	.029	.033	.038	.042	.045	.050	.055	.061	.068	.070			
		ALTITUDE: 10000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	260.	300.	340.	380.	420.	440.	460.	480.	500.	505.	510.	515.	520.		
50000.		.032	.038	.046	.054	.064	.076	.084	.093	.108	.123	.128	.134	.143	.158		
60000.		.028	.033	.040	.047	.055	.065	.072	.080	.091	.107	.112	.117	.125	.139		
70000.		.024	.028	.035	.041	.048	.057	.063	.071	.081	.095	.098	.104	.111	.124		
80000.		.021	.026	.031	.036	.043	.051	.056	.063	.072	.085	.080	.084	.100	.112		
90000.		.023	.028	.032	.036	.046	.051	.057	.065	.077	.081	.085	.091	.102			
100000.		.021	.025	.028	.035	.042	.046	.052	.060	.070	.074	.078	.084	.094			
110000.		.019	.023	.027	.032	.038	.042	.048	.055	.065	.068	.072	.077	.087			
		ALTITUDE: 20000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	260.	300.	320.	340.	350.	360.	370.	380.	390.	395.	400.	405.	410.		
50000.		.034	.042	.051	.058	.068	.075	.084	.094	.108	.123	.128	.134	.143	.158		
60000.		.028	.036	.043	.048	.055	.065	.072	.080	.091	.107	.112	.117	.125	.139		
70000.		.025	.031	.036	.042	.046	.055	.062	.069	.078	.091	.098	.104	.111	.124		
80000.		.027	.033	.037	.041	.043	.046	.049	.053	.057	.065	.068	.072	.084	.097		
90000.		.025	.030	.033	.037	.039	.041	.044	.047	.051	.053	.055	.058	.068	.081		
100000.		.022	.027	.030	.033	.035	.038	.040	.043	.046	.048	.050	.053	.055			
110000.		.025	.027	.030	.032	.034	.037	.038	.042	.044	.046	.048	.048	.051			
		ALTITUDE: 30000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	240.	260.	270.	280.	290.	300.	305.	310.	315.	320.	325.	330.	335.		
50000.		.037	.042	.047	.050	.053	.057	.062	.064	.067	.070	.073	.077	.081	.088		
60000.		.031	.035	.040	.042	.045	.049	.052	.055	.057	.059	.062	.065	.069	.073		
70000.		.027	.031	.034	.037	.038	.042	.045	.047	.049	.052	.054	.057	.060	.064		
80000.		.027	.030	.032	.035	.037	.040	.042	.044	.046	.048	.050	.053	.056			
90000.		.024	.027	.028	.031	.033	.036	.038	.039	.041	.043	.045	.048	.051			
100000.		.025	.028	.028	.030	.033	.034	.036	.037	.039	.041	.043	.045	.048			
110000.		.024	.026	.026	.028	.030	.033	.034	.036	.038	.040	.042	.044	.046			
		ALTITUDE: 40000. FEET															
		CALIBRATED AIRSPEED (KNOTS CAS)															
WEIGHT		220.	225.	230.	235.	240.	245.	250.	255.	260.	265.	270.	275.	280.	285.		
50000.		.043	.044	.048	.049	.051	.054	.057	.060	.064	.068	.074	.080	.088	.107		
60000.		.038	.037	.038	.041	.043	.045	.048	.051	.054	.058	.062	.068	.075	.081		
70000.		.031	.032	.034	.035	.037	.038	.041	.044	.047	.050	.054	.058	.065	.078		
80000.			.030	.031	.033	.035	.037	.039	.041	.044	.048	.052	.058	.070			
90000.								.033	.035	.037	.040	.043	.047	.052	.063		
100000.											.036	.038	.042	.047	.057		
110000.												.038	.043	.052			

TABLE 8 GUST SENSITIVITY OF C-130

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: C-130

ALTITUDE: 0, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	220.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.	340.	350.
50000.	.040	.044	.048	.050	.052	.055	.057	.058	.061	.064	.068	.068	.071	.074
70000.	.038	.039	.043	.045	.047	.048	.051	.053	.055	.057	.058	.062	.064	.068
80000.	.032	.038	.038	.041	.043	.044	.046	.048	.050	.052	.054	.056	.058	.060
90000.	.029	.032	.036	.037	.038	.041	.042	.044	.046	.047	.049	.051	.053	.055
100000.	.027	.030	.033	.034	.036	.037	.039	.040	.042	.044	.045	.047	.048	.051
110000.	.025	.028	.030	.032	.033	.035	.036	.037	.039	.040	.042	.044	.045	.047
120000.		.026	.028	.030	.031	.032	.034	.035	.036	.038	.038	.041	.042	.044
130000.		.024	.026	.028	.028	.030	.031	.033	.034	.035	.037	.038	.038	.041
140000.		.023	.025	.026	.027	.028	.030	.031	.032	.033	.034	.036	.037	.038
150000.			.023	.025	.026	.027	.028	.030	.031	.033	.034	.035	.036	.038
160000.			.022	.023	.024	.025	.026	.027	.028	.030	.031	.032	.033	.034

ALTITUDE: 10000, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	220.	240.	250.	260.	270.	280.	290.	300.	310.	315.	320.	325.	330.
50000.	.043	.048	.053	.055	.058	.060	.063	.065	.068	.071	.073	.074	.078	.077
70000.	.038	.043	.047	.048	.051	.054	.056	.058	.061	.063	.065	.068	.067	.068
80000.	.035	.038	.042	.044	.046	.048	.050	.053	.055	.057	.058	.060	.061	.062
90000.	.031	.035	.038	.040	.042	.044	.046	.048	.050	.052	.053	.054	.055	.056
100000.	.028	.032	.035	.037	.039	.040	.042	.044	.046	.048	.048	.050	.051	.052
110000.	.027	.029	.032	.034	.036	.037	.038	.041	.042	.044	.045	.046	.047	.048
120000.		.027	.030	.032	.033	.035	.036	.038	.039	.041	.042	.043	.044	.045
130000.		.025	.028	.029	.031	.032	.034	.035	.037	.038	.038	.040	.041	.042
140000.		.024	.026	.028	.028	.030	.032	.033	.034	.036	.037	.037	.038	.039
150000.			.025	.026	.027	.028	.030	.031	.032	.034	.034	.035	.036	.037
160000.			.023	.025	.026	.027	.028	.031	.032	.033	.033	.034	.034	.036

ALTITUDE: 20000, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	210.	220.	230.	240.	250.	260.	270.	280.	290.	295.	300.	305.	310.
50000.	.047	.050	.052	.055	.058	.061	.064	.067	.071	.074	.076	.078	.080	.082
70000.	.041	.044	.048	.048	.051	.054	.057	.060	.062	.065	.067	.068	.071	.072
80000.	.037	.038	.041	.044	.046	.048	.051	.053	.056	.058	.060	.062	.063	.065
90000.	.034	.035	.037	.038	.041	.044	.046	.048	.051	.053	.055	.056	.057	.058
100000.	.031	.032	.034	.036	.038	.040	.042	.044	.046	.048	.050	.051	.052	.054
110000.	.028	.030	.031	.033	.035	.037	.038	.041	.043	.045	.046	.047	.048	.050
120000.		.028	.029	.031	.032	.034	.036	.038	.039	.042	.043	.044	.045	.046
130000.			.027	.028	.030	.032	.033	.035	.037	.038	.040	.041	.042	.043
140000.				.027	.028	.030	.031	.033	.034	.036	.037	.038	.039	.040
150000.				.025	.026	.028	.029	.031	.032	.034	.035	.036	.037	.038
160000.					.025	.026	.028	.029	.030	.032	.033	.034	.035	.036

ALTITUDE: 30000, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	210.	220.	230.	240.	250.	260.	270.	275.	280.	285.	290.	295.	300.
50000.	.052	.055	.058	.062	.065	.070	.074	.078	.082	.085	.088	.091	.095	.098
70000.	.045	.048	.051	.054	.058	.061	.065	.070	.072	.074	.077	.080	.083	.087
80000.	.040	.043	.045	.048	.051	.055	.058	.062	.064	.066	.068	.072	.075	.078
90000.	.038	.038	.041	.043	.046	.048	.052	.055	.058	.060	.062	.065	.067	.070
100000.	.033	.035	.037	.040	.042	.045	.048	.051	.053	.055	.057	.059	.062	.064
110000.	.030	.032	.034	.036	.038	.041	.044	.047	.048	.050	.052	.054	.057	.058
120000.		.030	.032	.034	.036	.038	.041	.043	.045	.046	.048	.050	.052	.055
130000.			.028	.031	.033	.035	.038	.040	.042	.043	.045	.047	.048	.051
140000.				.028	.031	.033	.035	.038	.039	.040	.042	.044	.046	.048
150000.					.028	.031	.033	.035	.037	.038	.039	.041	.043	.045
160000.						.028	.031	.033	.034	.036	.037	.038	.040	.042

ALTITUDE: 40000, FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	200.	205.	210.	215.	220.	225.	230.	235.	240.	245.	250.	255.	260.	265.
50000.	.058	.061	.064	.067	.068	.073	.078	.080	.084	.088	.095	.101	.108	.110
70000.	.051	.053	.055	.058	.061	.063	.066	.070	.074	.078	.083	.088	.095	.104
80000.	.046	.047	.048	.051	.054	.058	.058	.062	.066	.068	.074	.078	.085	.093
90000.	.041	.043	.044	.046	.048	.051	.053	.056	.058	.062	.067	.071	.077	.084
100000.	.037	.039	.040	.042	.044	.046	.048	.051	.054	.057	.061	.065	.070	.078
110000.		.035	.037	.038	.040	.042	.044	.046	.048	.052	.056	.059	.064	.070
120000.			.035	.037	.038	.041	.043	.045	.046	.051	.055	.058	.065	.068
130000.					.031	.036	.040	.042	.045	.048	.051	.055	.060	.065
140000.						.037	.038	.042	.045	.048	.052	.056	.062	.068
150000.							.037	.038	.042	.045	.048	.052	.058	.063
160000.								.038	.042	.045	.048	.052	.058	.063



TABLE 9 GUST SENSITIVITY OF C-141

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: C-141

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.	340.	350.	360.	370.	380.	390.	400.	410.	420.	430.	440.	450.	470.	480.	490.	500.
140000.	.035	.040	.043	.051	.058	.062	.068	.073	.078	.083	.088	.089	.081	.084														
160000.	.032	.037	.041	.048	.051	.057	.063	.067	.071	.078	.078	.081	.084	.087														
180000.	.028	.034	.038	.043	.047	.052	.058	.062	.066	.070	.073	.075	.078	.080														
200000.	.027	.031	.035	.038	.044	.048	.054	.057	.061	.065	.068	.070	.072	.075														
220000.	.025	.028	.033	.037	.041	.045	.050	.053	.057	.061	.063	.065	.068	.070														
240000.	.024	.027	.031	.034	.038	.042	.047	.050	.054	.057	.058	.061	.064	.068														
260000.	.022	.025	.028	.032	.036	.040	.044	.047	.050	.054	.056	.058	.060	.062														
280000.	.024	.027	.030	.034	.038	.042	.045	.048	.051	.053	.055	.057	.059	.061														
300000.	.023	.026	.029	.032	.036	.039	.042	.045	.048	.050	.052	.054	.056	.058														
320000.	.022	.024	.027	.031	.034	.037	.040	.043	.046	.048	.049	.051	.053	.055														
340000.	.021	.023	.026	.029	.032	.035	.038	.041	.044	.045	.047	.048	.051	.053														

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.	340.	350.	360.	370.	380.	390.	400.	410.	420.	430.	440.	450.
140000.	.038	.044	.050	.055	.058	.064	.068	.074	.080	.083	.088	.090	.094	.098	.102	.106	.110	.114	.118	.122	.126	.130	.134	.138
160000.	.035	.040	.046	.049	.053	.058	.062	.067	.073	.078	.079	.082	.086	.090	.094	.098	.102	.106	.110	.114	.118	.122	.126	.130
180000.	.032	.037	.042	.045	.048	.053	.057	.062	.067	.068	.072	.075	.079	.083	.087	.091	.095	.099	.103	.107	.111	.115	.119	.123
200000.	.028	.034	.038	.042	.045	.049	.053	.057	.062	.064	.067	.070	.073	.077	.081	.084	.088	.092	.095	.099	.103	.107	.111	.115
220000.	.027	.031	.035	.038	.042	.045	.048	.053	.057	.058	.062	.065	.069	.073	.076	.080	.083	.087	.090	.094	.098	.102	.106	.110
240000.	.025	.028	.033	.036	.039	.042	.045	.048	.053	.056	.058	.061	.064	.067	.070	.073	.076	.080	.083	.087	.090	.094	.098	.102
260000.	.024	.027	.031	.034	.037	.040	.043	.046	.050	.052	.055	.057	.060	.063	.066	.069	.072	.075	.078	.081	.084	.087	.090	.093
280000.	.026	.028	.032	.034	.037	.040	.044	.047	.049	.051	.054	.056	.059	.062	.065	.068	.071	.074	.077	.080	.083	.086	.089	.092
300000.	.024	.026	.030	.032	.035	.038	.041	.045	.047	.049	.051	.053	.055	.058	.061	.064	.067	.070	.073	.076	.079	.082	.085	.088
320000.	.023	.026	.028	.031	.033	.036	.039	.042	.044	.046	.048	.051	.053	.056	.059	.062	.065	.068	.071	.074	.077	.080	.083	.086
340000.	.025	.028	.030	.032	.034	.037	.040	.043	.046	.049	.052	.055	.058	.061	.064	.067	.070	.073	.076	.079	.082	.085	.088	.091

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	240.	260.	280.	300.	310.	320.	330.	340.	350.	360.	380.	390.	400.	410.	420.	430.	440.	450.	460.	470.	480.	490.	500.	
140000.	.042	.047	.051	.055	.059	.062	.065	.068	.071	.074	.077	.080	.082	.084	.086	.088	.090	.092	.094	.096	.098	.100	.102	.104	.106
180000.	.036	.042	.046	.051	.056	.058	.061	.064	.067	.071	.072	.074	.076	.078	.080	.082	.084	.086	.088	.090	.092	.094	.096	.098	.100
190000.	.035	.038	.042	.046	.051	.053	.056	.058	.061	.064	.066	.068	.070	.072	.074	.076	.078	.080	.082	.084	.086	.088	.090	.092	.094
200000.	.035	.035	.038	.042	.046	.048	.051	.054	.056	.058	.061	.062	.064	.066	.068	.070	.072	.074	.076	.078	.080	.082	.084	.086	.088
220000.	.028	.032	.035	.038	.043	.045	.047	.048	.052	.055	.056	.058	.059	.061	.063	.065	.067	.069	.071	.073	.075	.077	.079	.081	.083
240000.	.027	.030	.033	.036	.040	.042	.044	.046	.048	.051	.052	.054	.055	.057	.059	.061	.063	.065	.067	.069	.071	.073	.075	.077	.079
260000.		.028	.031	.034	.037	.039	.041	.043	.045	.048	.049	.050	.052	.053	.055	.057	.059	.061	.063	.065	.067	.069	.071	.073	.075
280000.		.028	.029	.032	.033	.037	.038	.040	.042	.045	.046	.047	.048	.049	.051	.053	.055	.057	.059	.061	.063	.065	.067	.069	.071
300000.		.025	.027	.030	.033	.035	.036	.038	.040	.042	.043	.045	.046	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064	.066	.068
320000.		.025	.026	.028	.031	.033	.034	.036	.038	.040	.041	.042	.043	.044	.045	.046	.047	.048	.049	.050	.051	.052	.053	.054	.055
340000.		.024	.027	.028	.031	.032	.034	.036	.038	.040	.041	.042	.043	.044	.045	.046	.047	.048	.049	.050	.051	.052	.053	.054	.055

TABLE 10 GUST SENSITIVITY OF F-4

## GUST SENSITIVITY (G/S/FT/SEC GUST)

AIRCRAFT TYPE: F-4

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	525.	550.	575.	600.	625.	650.	700.	800.
25000.	.028	.032	.037	.043	.050	.057	.063	.068	.071	.077	.083	.088	.103	.086
30000.	.022	.027	.032	.037	.043	.049	.053	.057	.062	.067	.073	.078	.090	.083
35000.	.020	.024	.028	.033	.039	.043	.046	.050	.054	.059	.065	.073	.080	.073
40000.	.017	.021	.025	.029	.034	.039	.041	.045	.048	.053	.058	.065	.072	.065
45000.	.016	.019	.023	.026	.030	.035	.037	.040	.044	.048	.053	.059	.065	.059
50000.	.014	.017	.021	.024	.028	.032	.034	.037	.040	.044	.048	.054	.059	.054
55000.	.013	.016	.019	.022	.026	.029	.031	.034	.037	.040	.044	.050	.055	.049
60000.	.013	.016	.019	.022	.026	.029	.031	.034	.037	.041	.045	.051	.056	.048

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	325.	350.	375.	400.	425.	450.	475.	500.	525.	550.	745.
25000.	.027	.030	.033	.036	.040	.043	.046	.050	.053	.056	.060	.063	.072	.082
30000.	.023	.026	.029	.031	.034	.037	.040	.043	.047	.051	.056	.062	.078	.070
35000.	.020	.023	.025	.027	.029	.032	.035	.037	.041	.045	.049	.054	.069	.061
40000.	.018	.020	.022	.024	.026	.028	.031	.033	.036	.040	.044	.048	.061	.054
45000.	.016	.018	.020	.022	.023	.025	.027	.030	.033	.036	.039	.043	.055	.049
50000.	.015	.016	.018	.020	.021	.023	.025	.027	.030	.032	.036	.040	.050	.044
55000.	.013	.015	.016	.018	.020	.021	.023	.025	.027	.030	.033	.036	.046	.040
60000.	.014	.015	.017	.018	.020	.021	.023	.025	.027	.030	.033	.036	.042	.037

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	425.	450.	475.	500.	550.	600.	650.	700.	750.	850.
25000.	.029	.035	.042	.052	.058	.066	.077	.080	.098	.112	.128	.147	.166	.184
30000.	.024	.030	.036	.044	.048	.056	.066	.069	.084	.098	.115	.134	.153	.171
35000.	.021	.026	.031	.038	.043	.049	.056	.060	.075	.088	.105	.124	.143	.161
40000.	.019	.023	.028	.034	.038	.044	.051	.053	.067	.079	.095	.114	.133	.151
45000.	.017	.021	.025	.030	.034	.039	.046	.048	.061	.073	.088	.107	.126	.144
50000.	.015	.018	.022	.026	.031	.036	.042	.044	.056	.067	.081	.099	.118	.136
55000.	.013	.017	.021	.025	.029	.033	.038	.040	.051	.061	.074	.091	.109	.127
60000.	.016	.019	.023	.028	.030	.035	.037	.034	.045	.054	.067	.084	.101	.118

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	325.	350.	375.	400.	450.	500.	550.	600.	700.	800.	950.
25000.	.030	.034	.038	.042	.047	.052	.056	.068	.084	.103	.123	.143	.163	.183
30000.	.025	.028	.032	.035	.039	.044	.048	.059	.074	.093	.113	.133	.153	.173
35000.	.022	.025	.029	.031	.034	.038	.045	.051	.067	.084	.104	.124	.144	.164
40000.	.019	.022	.024	.027	.030	.034	.039	.045	.061	.078	.098	.118	.138	.158
45000.	.017	.019	.022	.024	.027	.030	.035	.041	.057	.074	.094	.114	.134	.154
50000.	.016	.018	.020	.022	.024	.027	.032	.037	.053	.071	.091	.111	.131	.151
55000.	.015	.016	.018	.020	.022	.025	.029	.034	.050	.068	.088	.108	.128	.148
60000.	.015	.017	.019	.021	.023	.027	.031	.036	.051	.069	.089	.109	.129	.149

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	270.	300.	310.	330.	350.	370.	390.	410.	430.	450.	500.	600.	700.
25000.	.033	.038	.043	.047	.052	.058	.064	.071	.078	.085	.092	.108	.124	.141
30000.	.028	.032	.036	.040	.045	.051	.056	.063	.070	.077	.084	.100	.116	.133
35000.	.024	.027	.031	.034	.038	.041	.045	.051	.057	.064	.071	.087	.103	.120
40000.	.021	.024	.028	.034	.036	.040	.043	.049	.055	.062	.069	.085	.101	.117
45000.	.019	.021	.025	.030	.032	.036	.039	.045	.051	.058	.065	.081	.097	.113
50000.	.018	.020	.023	.027	.029	.033	.036	.042	.048	.055	.062	.078	.094	.110
55000.	.016	.018	.021	.025	.027	.031	.034	.040	.046	.053	.060	.076	.092	.108
60000.	.018	.019	.023	.024	.028	.032	.035	.041	.047	.054	.061	.077	.093	.109

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	280.	300.	320.	340.	360.	380.	400.	420.	440.	460.	480.	500.	520.	540.	560.	580.	600.
25000.	.044	.042	.040	.038	.036	.034	.032	.030	.028	.026	.024	.022	.020	.018	.016	.014	.012	.010
30000.	.037	.035	.033	.031	.029	.027	.025	.023	.021	.019	.017	.015	.013	.011	.009	.007	.005	.003
35000.	.032	.030	.028	.026	.024	.022	.020	.018	.016	.014	.012	.010	.008	.006	.004	.002	.001	.000
40000.	.028	.027	.024	.022	.020	.018	.016	.014	.012	.010	.008	.006	.004	.002	.001	.000	.000	.000
45000.	.025	.024	.022	.020	.018	.016	.014	.012	.010	.008	.006	.004	.002	.001	.000	.000	.000	.000
50000.	.021	.020	.018	.016	.014	.012	.010	.008	.006	.004	.002	.001	.000	.000	.000	.000	.000	.000
55000.	.020	.018	.016	.014	.012	.010	.008	.006	.004	.002	.001	.000	.000	.000	.000	.000	.000	.000
60000.	.016	.015	.013	.011	.009	.007	.005	.003	.002	.001	.000	.000	.000	.000	.000	.000	.000	.000

TABLE 11 GUST SENSITIVITY OF F-15

GUST SENSITIVITY (G'S/FT/SEC GUST)														
AIRCRAFT TYPE: F-15														
ALTITUDE: 0. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.027	.032	.038	.044	.051	.059	.068	.073	.078	.087	.101	.088	.084	.088
35000.	.023	.029	.034	.039	.045	.052	.060	.065	.069	.077	.090	.088	.083	.078
40000.	.021	.025	.030	.035	.040	.046	.054	.058	.062	.070	.081	.078	.075	.071
45000.	.019	.023	.027	.032	.038	.042	.049	.052	.056	.063	.074	.072	.068	.064
50000.	.017	.021	.025	.029	.033	.038	.045	.048	.052	.058	.068	.066	.062	.058
55000.	.016	.019	.023	.026	.031	.035	.041	.044	.048	.054	.063	.061	.057	.054
60000.	.015	.018	.021	.024	.028	.033	.039	.041	.044	.050	.058	.057	.053	.050
ALTITUDE: 10000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.028	.034	.041	.048	.056	.062	.068	.078	.087	.087	.082	.077	.073	.068
35000.	.024	.030	.036	.042	.050	.054	.060	.069	.077	.077	.072	.067	.064	.061
40000.	.022	.026	.032	.037	.044	.048	.054	.061	.068	.068	.064	.060	.057	.054
45000.	.020	.024	.028	.034	.040	.044	.048	.053	.060	.062	.058	.054	.051	.048
50000.	.018	.022	.026	.030	.036	.040	.044	.051	.057	.057	.053	.049	.046	.044
55000.	.016	.020	.024	.028	.033	.037	.041	.047	.053	.052	.048	.045	.042	.040
60000.	.015	.018	.022	.026	.031	.034	.037	.043	.048	.048	.045	.041	.038	.037
ALTITUDE: 20000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.028	.036	.044	.048	.054	.061	.070	.078	.078	.070	.065	.058	.055	.054
35000.	.026	.031	.038	.042	.047	.053	.062	.068	.068	.061	.057	.051	.048	.047
40000.	.023	.028	.034	.037	.042	.047	.055	.061	.059	.058	.050	.045	.042	.041
45000.	.020	.025	.030	.034	.038	.043	.049	.053	.053	.048	.045	.040	.038	.037
50000.	.018	.023	.027	.031	.034	.038	.045	.050	.048	.044	.041	.038	.034	.033
55000.	.017	.021	.025	.028	.031	.035	.041	.046	.044	.041	.037	.033	.031	.031
60000.	.015	.018	.023	.026	.029	.033	.038	.042	.041	.037	.034	.031	.028	.028
ALTITUDE: 30000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.031	.038	.044	.048	.053	.059	.068	.078	.084	.080	.078	.073	.068	.063
35000.	.027	.034	.038	.042	.048	.057	.067	.075	.071	.067	.063	.058	.057	.057
40000.	.024	.030	.033	.038	.042	.050	.059	.065	.061	.058	.054	.050	.048	.048
45000.	.021	.027	.030	.034	.038	.045	.054	.061	.057	.054	.050	.046	.043	.043
50000.	.019	.024	.027	.031	.035	.041	.049	.057	.053	.051	.047	.043	.040	.040
55000.	.018	.022	.025	.028	.032	.038	.047	.054	.050	.048	.044	.040	.037	.037
60000.	.016	.021	.023	.026	.030	.034	.041	.048	.044	.042	.038	.035	.032	.032
ALTITUDE: 40000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.034	.042	.048	.052	.057	.063	.072	.082	.088	.084	.080	.075	.070	.065
35000.	.028	.031	.034	.038	.042	.048	.057	.067	.073	.069	.065	.060	.055	.050
40000.	.026	.028	.030	.032	.035	.039	.047	.057	.063	.060	.056	.052	.048	.045
45000.	.023	.025	.026	.028	.031	.035	.043	.053	.059	.056	.052	.048	.044	.041
50000.	.021	.022	.024	.026	.028	.031	.039	.049	.055	.052	.048	.044	.040	.037
55000.	.019	.020	.022	.024	.026	.028	.036	.047	.053	.050	.046	.042	.038	.035
60000.	.018	.019	.020	.022	.024	.026	.034	.045	.051	.048	.044	.040	.036	.033
ALTITUDE: 50000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
30000.	.043	.042	.041	.039	.038	.037	.035	.033	.032	.030	.028	.026	.027	.028
35000.	.037	.036	.035	.034	.033	.032	.030	.028	.027	.026	.025	.024	.023	.022
40000.	.033	.032	.031	.030	.029	.028	.026	.025	.024	.023	.021	.021	.020	.020
45000.	.029	.028	.028	.027	.026	.025	.023	.022	.021	.020	.019	.018	.018	.017
50000.	.026	.025	.025	.024	.023	.022	.021	.020	.019	.018	.017	.017	.016	.016
55000.	.023	.023	.022	.021	.020	.019	.018	.017	.016	.015	.015	.015	.015	.014
60000.	.020	.020	.019	.018	.017	.016	.015	.014	.013	.013	.013	.013	.013	.013

TABLE 12 GUST SENSITIVITY OF F-16

## GUST SENSITIVITY (G-S/FT/SEC GUST)

AIRCRAFT TYPE: F-16

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	440.	480.	520.	560.	590.	610.	630.	640.	650.	660.
15000.	.025	.030	.036	.041	.047	.052	.058	.067	.074	.080	.088	.093	.098	.096
20000.	.018	.023	.028	.032	.036	.041	.046	.052	.058	.063	.069	.073	.076	.076
25000.	.015	.019	.023	.026	.030	.035	.037	.043	.048	.052	.057	.060	.063	.063
30000.	.013	.016	.018	.022	.025	.028	.032	.038	.040	.044	.048	.052	.054	.053
35000.	.014	.017	.019	.022	.024	.027	.031	.035	.038	.042	.045	.047	.047	

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	470.	480.	510.	530.	540.	550.	600.	700.	820.
15000.	.028	.031	.037	.044	.052	.056	.061	.068	.073	.078	.083	.082	.075	.068
20000.	.020	.024	.028	.034	.040	.044	.047	.052	.057	.061	.065	.064	.058	.053
25000.	.016	.020	.023	.028	.033	.036	.039	.042	.046	.050	.053	.052	.047	.043
30000.	.014	.017	.020	.023	.028	.030	.033	.036	.038	.042	.045	.044	.038	.035
35000.	.014	.017	.020	.024	.028	.028	.031	.034	.036	.038	.038	.034	.031	

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	370.	390.	410.	430.	450.	500.	550.	600.	650.	750.	840.
15000.	.027	.031	.040	.043	.047	.052	.056	.065	.071	.086	.082	.080	.057	.055
20000.	.020	.025	.031	.033	.038	.040	.044	.050	.054	.061	.068	.068	.048	.042
25000.	.017	.020	.025	.027	.028	.032	.036	.041	.044	.041	.039	.037	.035	.034
30000.	.014	.017	.021	.023	.025	.027	.030	.035	.037	.035	.033	.031	.028	.028
35000.	.015	.018	.020	.021	.024	.026	.030	.032	.030	.028	.027	.025	.024	

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	310.	340.	350.	360.	400.	450.	500.	600.	700.	800.	860.	860.
15000.	.028	.032	.037	.044	.047	.050	.060	.068	.085	.081	.047	.045	.044	.044
20000.	.021	.025	.028	.034	.036	.038	.046	.048	.047	.038	.036	.034	.034	.033
25000.	.017	.020	.023	.027	.028	.031	.037	.037	.034	.032	.028	.028	.027	.027
30000.	.017	.018	.023	.025	.026	.031	.031	.028	.028	.024	.023	.023	.023	.022
35000.	.014	.017	.020	.021	.023	.027	.027	.025	.023	.021	.020	.018	.018	

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	270.	280.	280.	300.	320.	360.	400.	500.	600.	700.	800.	850.
15000.	.031	.033	.035	.038	.042	.047	.048	.045	.042	.038	.036	.035	.034	.034
20000.	.023	.025	.027	.028	.032	.035	.037	.034	.032	.028	.027	.026	.026	.026
25000.	.019	.020	.022	.023	.025	.028	.030	.027	.025	.023	.022	.021	.021	.021
30000.	.018	.020	.021	.024	.025	.028	.023	.021	.019	.018	.018	.017	.017	.017
35000.				.018	.021	.021	.020	.018	.018	.016	.016	.015	.015	.015

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	330.	370.	410.	450.	480.	530.	570.	610.	650.	690.	710.	720.
15000.	.038	.038	.033	.031	.030	.028	.028	.028	.028	.028	.027	.027	.027	.027
20000.	.030	.027	.025	.023	.022	.022	.021	.021	.021	.021	.021	.020	.020	.020
25000.	.024	.022	.020	.018	.018	.018	.017	.017	.017	.017	.016	.016	.016	.016
30000.		.018	.017	.016	.015	.015	.014	.014	.014	.014	.014	.014	.014	.013
35000.			.014	.013	.013	.013	.012	.012	.012	.012	.012	.012	.012	.012

TABLE 13 GUST SENSITIVITY OF F-106

GUST SENSITIVITY (G'S/FT/SEC GUST)																	
AIRCRAFT TYPE: F-108																	
ALTITUDE: 0. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	620.	640.	660.	680.	700.	720.	750.	800.	
25000.	.030	.038	.043	.048	.056	.064	.072	.082	.087	.092	.098	.105	.111	.113			
30000.	.026	.032	.037	.043	.048	.056	.063	.072	.076	.081	.087	.093	.098	.098			
35000.	.023	.028	.033	.038	.043	.048	.056	.064	.068	.073	.078	.083	.088	.088			
40000.	.021	.025	.030	.034	.038	.044	.050	.058	.062	.066	.071	.076	.080	.080			
ALTITUDE: 10000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	300.	350.	400.	450.	480.	500.	520.	540.	560.	580.	620.	640.	660.	700.	750.	800.
25000.	.032	.039	.046	.053	.061	.067	.072	.078	.081	.088	.098	.102	.102	.102			
30000.	.028	.034	.040	.046	.053	.058	.062	.068	.071	.077	.086	.090	.088	.088			
35000.	.024	.030	.035	.041	.047	.051	.055	.058	.063	.068	.077	.080	.079	.079			
40000.	.022	.028	.031	.036	.042	.046	.049	.053	.056	.061	.069	.072	.071	.071			
ALTITUDE: 20000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	300.	350.	400.	425.	450.	475.	500.	550.	600.	650.	700.	750.	800.			
25000.	.034	.041	.048	.058	.065	.071	.080	.088	.081	.080	.080	.089	.089	.089			
30000.	.028	.036	.042	.050	.058	.061	.069	.077	.078	.078	.077	.076	.076	.076			
35000.	.026	.031	.037	.044	.048	.054	.061	.068	.070	.068	.067	.067	.067	.067			
40000.	.023	.028	.033	.038	.043	.048	.054	.061	.062	.061	.060	.059	.059	.059			
ALTITUDE: 30000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	300.	325.	350.	375.	400.	450.	500.	550.	600.	650.	700.	750.	800.			
25000.	.036	.044	.050	.056	.063	.073	.078	.077	.076	.075	.075	.075	.075	.075			
30000.	.031	.038	.042	.047	.054	.062	.067	.068	.065	.064	.064	.063	.063	.063			
35000.	.027	.033	.037	.041	.047	.055	.058	.057	.056	.056	.055	.055	.055	.055			
40000.	.024	.029	.033	.037	.042	.048	.052	.051	.050	.049	.048	.048	.048	.048			
ALTITUDE: 40000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	275.	300.	325.	350.	400.	450.	500.	550.	600.	625.	650.	675.	700.			
25000.	.038	.045	.052	.063	.068	.084	.083	.082	.081	.081	.081	.081	.081	.081			
30000.	.033	.038	.044	.053	.058	.074	.073	.072	.072	.072	.072	.072	.072	.072			
35000.	.028	.033	.038	.046	.048	.064	.062	.061	.061	.061	.061	.061	.061	.061			
40000.	.025	.029	.034	.041	.043	.062	.061	.060	.060	.060	.060	.060	.060	.060			
ALTITUDE: 50000. FEET																	
CALIBRATED AIRSPEED (KNOTS CAS)																	
WEIGHT	250.	280.	330.	370.	410.	450.	480.	510.	530.	550.	570.	590.	580.	580.			
25000.	.048	.054	.062	.081	.090	.090	.098	.098	.098	.098	.098	.098	.098	.098			
30000.	.040	.048	.054	.063	.062	.062	.062	.061	.061	.061	.061	.061	.061	.061			
35000.	.035	.038	.038	.037	.036	.036	.036	.035	.035	.035	.035	.035	.035	.035			
40000.	.031	.035	.039	.052	.052	.052	.052	.051	.051	.051	.051	.051	.051	.051			

TABLE 14 GUST SENSITIVITY OF F-111 @ 16° SHEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)												
AIRCRAFT TYPE: F-111 16 DEG SHEEP												
ALTITUDE: 0. FEET												
CALIBRATED AIRSPEED (KNOTS CAS)												
WEIGHT	250.	270.	290.	310.	330.	340.	350.	360.	370.	380.	385.	400.
50000.	.018	.021	.023	.024	.028	.027	.028	.029	.030	.031	.032	.033
55000.	.018	.019	.021	.022	.024	.025	.028	.027	.028	.029	.029	.031
60000.	.018	.018	.019	.021	.022	.023	.024	.025	.026	.027	.028	.029
65000.	.018	.018	.018	.021	.021	.021	.022	.023	.024	.025	.025	.026
70000.	.017	.018	.018	.020	.021	.021	.022	.022	.023	.024	.024	.025
75000.	.017	.018	.018	.019	.020	.020	.021	.021	.022	.022	.022	.023
80000.	.016	.017	.018	.018	.019	.019	.020	.020	.021	.021	.022	.022
85000.	.015	.016	.017	.017	.018	.018	.019	.019	.020	.020	.020	.021
90000.	.015	.016	.017	.017	.018	.018	.019	.019	.020	.020	.020	.021
95000.	.014	.015	.016	.016	.017	.017	.018	.018	.019	.019	.019	.020
100000.	.014	.015	.016	.016	.017	.017	.018	.018	.019	.019	.019	.020
ALTITUDE: 10000. FEET												
CALIBRATED AIRSPEED (KNOTS CAS)												
WEIGHT	250.	270.	280.	310.	330.	340.	350.	360.	370.	380.	385.	400.
50000.	.020	.022	.024	.028	.028	.029	.030	.032	.033	.035	.036	.038
55000.	.020	.022	.024	.028	.028	.029	.030	.032	.033	.034	.034	.035
60000.	.018	.020	.022	.024	.025	.026	.027	.028	.028	.030	.031	.032
65000.	.019	.020	.022	.023	.024	.025	.026	.027	.028	.028	.029	.030
70000.	.017	.019	.020	.021	.022	.023	.024	.025	.026	.027	.027	.028
75000.	.018	.019	.020	.021	.022	.023	.024	.025	.026	.027	.027	.028
80000.	.017	.018	.019	.020	.021	.022	.023	.024	.025	.025	.025	.026
85000.	.017	.018	.019	.020	.021	.022	.023	.024	.025	.025	.025	.026
90000.	.017	.018	.019	.020	.021	.022	.023	.024	.025	.025	.025	.026
95000.	.018	.019	.020	.021	.022	.023	.024	.025	.026	.026	.026	.027
100000.	.018	.019	.020	.021	.022	.023	.024	.025	.026	.026	.026	.027
ALTITUDE: 20000. FEET												
CALIBRATED AIRSPEED (KNOTS CAS)												
WEIGHT	250.	270.	290.	310.	330.	340.	350.	360.	370.	380.	385.	400.
50000.	.021	.023	.025	.028	.031	.033	.035	.037	.038	.043	.045	.048
55000.	.021	.023	.025	.028	.030	.032	.034	.035	.036	.038	.041	.044
60000.	.018	.021	.024	.026	.028	.029	.031	.032	.034	.035	.036	.039
65000.	.020	.022	.024	.026	.028	.029	.031	.032	.034	.035	.036	.039
70000.	.018	.020	.022	.024	.026	.027	.029	.030	.032	.033	.034	.037
75000.	.018	.021	.022	.024	.026	.027	.029	.030	.032	.033	.034	.037
80000.	.018	.021	.022	.024	.026	.027	.029	.030	.032	.033	.034	.037
85000.	.018	.021	.022	.024	.026	.027	.029	.030	.032	.033	.034	.037
90000.	.018	.021	.022	.024	.026	.027	.029	.030	.032	.033	.034	.037
95000.	.018	.021	.022	.024	.026	.027	.029	.030	.032	.033	.034	.037
100000.	.018	.021	.022	.024	.026	.027	.029	.030	.032	.033	.034	.037

TABLE 15 GUST SENSITIVITY OF F-111 @ 26° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)  
AIRCRAFT TYPE: F-111 26 DEG SWEEP  
ALTITUDE: 0. FEET

WEIGHT	250.	280.	310.	340.	370.	380.	410.	430.	450.	480.	470.	480.	480.	500.
50000.	.018	.021	.023	.026	.028	.031	.033	.035	.038	.038	.041	.042	.044	.048
55000.		.018	.024	.024	.028	.028	.030	.032	.035	.038	.037	.039	.040	.042
60000.		.017	.020	.022	.024	.028	.028	.030	.032	.033	.034	.036	.037	.038
65000.		.018	.018	.020	.023	.024	.028	.028	.030	.031	.032	.033	.034	.036
70000.			.017	.019	.021	.023	.024	.028	.028	.029	.030	.031	.032	.034
75000.			.016	.018	.020	.021	.023	.024	.028	.027	.028	.028	.030	.031
80000.			.015	.017	.019	.020	.021	.023	.025	.025	.026	.027	.028	.030
85000.				.018	.018	.019	.020	.022	.023	.024	.025	.026	.027	.028
90000.				.015	.017	.018	.019	.020	.022	.023	.024	.024	.025	.027
95000.				.014	.018	.017	.018	.019	.021	.022	.022	.023	.024	.025
100000.				.013	.015	.016	.017	.018	.020	.021	.021	.022	.023	.024

ALTITUDE: 10000. FEET  
CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	330.	380.	380.	420.	450.	480.	480.	500.	505.	510.	515.	520.
50000.	.018	.022	.028	.030	.034	.038	.045	.054	.058	.062	.065	.068	.072	.078
55000.		.020	.024	.027	.031	.035	.041	.048	.053	.057	.060	.063	.068	.073
60000.		.018	.022	.025	.028	.032	.038	.045	.048	.053	.055	.058	.061	.068
65000.		.017	.021	.023	.028	.030	.035	.042	.045	.048	.052	.054	.057	.063
70000.		.016	.018	.022	.025	.028	.033	.038	.042	.046	.048	.051	.053	.058
75000.			.018	.020	.023	.028	.031	.037	.040	.043	.045	.047	.050	.055
80000.			.017	.018	.022	.025	.028	.035	.038	.041	.043	.045	.047	.052
85000.			.016	.018	.020	.023	.027	.033	.035	.038	.040	.042	.045	.048
90000.			.015	.017	.018	.022	.028	.031	.034	.037	.038	.040	.042	.047
95000.				.018	.018	.021	.025	.030	.032	.035	.038	.038	.040	.045
100000.				.015	.017	.020	.023	.028	.030	.033	.035	.036	.038	.043

ALTITUDE: 20000. FEET  
CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	380.	410.	420.	430.	435.	440.	450.	460.	470.	500.	530.
50000.	.020	.025	.032	.038	.048	.054	.061	.068	.078	.078	.088	.082	.091	.095
55000.		.023	.030	.038	.048	.050	.058	.067	.070	.070	.082	.077	.087	.091
60000.		.021	.027	.033	.041	.048	.051	.057	.063	.063	.078	.073	.083	.088
65000.		.020	.028	.030	.038	.042	.048	.053	.061	.060	.074	.068	.078	.085
70000.		.018	.023	.028	.038	.040	.044	.050	.057	.058	.070	.068	.077	.083
75000.		.017	.022	.027	.034	.037	.042	.047	.053	.053	.067	.063	.073	.079
80000.			.021	.025	.032	.035	.038	.044	.050	.050	.064	.060	.070	.076
85000.			.018	.024	.030	.033	.037	.042	.047	.047	.062	.058	.068	.074
90000.			.018	.022	.028	.031	.035	.039	.045	.045	.060	.056	.066	.072
95000.			.017	.021	.027	.030	.033	.038	.043	.043	.058	.054	.064	.070
100000.			.017	.020	.026	.028	.032	.038	.041	.041	.056	.053	.063	.069

ALTITUDE: 30000. FEET  
CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	330.	340.	350.	360.	370.	380.	390.	410.	430.	450.	470.
50000.	.021	.030	.038	.043	.048	.055	.064	.082	.054	.048	.042	.038	.032
55000.		.027	.035	.038	.045	.050	.058	.057	.050	.045	.038	.035	.030
60000.		.025	.032	.036	.041	.048	.054	.053	.048	.041	.038	.032	.027
65000.		.023	.030	.033	.038	.043	.050	.048	.043	.038	.033	.028	.023
70000.		.021	.028	.031	.036	.040	.047	.045	.040	.036	.031	.027	.023
75000.			.028	.028	.033	.038	.044	.043	.037	.033	.028	.025	.022
80000.			.025	.027	.031	.035	.041	.040	.035	.030	.027	.024	.021
85000.			.023	.028	.030	.033	.038	.038	.033	.028	.025	.022	.019
90000.				.028	.032	.037	.038	.031	.026	.024	.021	.020	.018
95000.					.030	.035	.034	.030	.027	.023	.020	.018	.017
100000.						.030	.032	.028	.025	.022	.018	.018	.017

ALTITUDE: 40000. FEET  
CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	270.	280.	285.	290.	285.	300.	305.	310.	320.	340.	360.	380.
50000.	.030	.034	.040	.048	.058	.052	.047	.044	.041	.037	.031	.028	.025	.022
55000.		.031	.036	.042	.051	.047	.043	.040	.037	.034	.029	.026	.024	.022
60000.			.038	.047	.044	.044	.040	.037	.034	.031	.028	.024	.022	.020
65000.							.037	.034	.030	.027	.023	.020	.018	.016
70000.									.030	.027	.023	.020	.018	.017
75000.											.020	.018	.016	.015
80000.												.018	.015	.014
85000.													.018	.015
90000.														.014
95000.														
100000.														

TABLE 16 GUST SENSITIVITY OF F-111 @ 50° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: F-111 NO DEN SWEEP

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.
50000.	.014	.018	.021	.024	.028	.033	.039	.043	.048	.057	.068	.079
55000.	.013	.016	.019	.022	.025	.030	.035	.040	.044	.052	.061	.069
60000.	.015	.018	.021	.024	.028	.033	.037	.041	.045	.056	.064	.076
65000.	.014	.016	.019	.022	.026	.030	.034	.038	.043	.052	.060	.067
70000.	.010	.013	.016	.021	.024	.028	.032	.036	.042	.049	.058	.069
75000.	.012	.014	.017	.019	.023	.027	.030	.034	.040	.046	.053	.061
80000.	.011	.013	.016	.018	.021	.025	.028	.032	.037	.044	.050	.058
85000.		.013	.015	.017	.020	.024	.028	.030	.033	.041	.047	.055
90000.		.012	.014	.016	.019	.022	.025	.028	.034	.039	.045	.054
95000.		.011	.013	.016	.018	.021	.024	.027	.032	.037	.043	.050
100000.		.011	.013	.015	.017	.020	.023	.026	.030	.036	.041	.048

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.
50000.	.015	.018	.022	.026	.031	.036	.043	.050	.057	.064	.076	.083
55000.	.014	.017	.020	.024	.028	.033	.039	.045	.052	.059	.068	.076
60000.	.015	.018	.022	.026	.032	.036	.042	.048	.055	.062	.072	.080
65000.	.014	.017	.020	.024	.030	.033	.038	.045	.051	.058	.067	.075
70000.	.013	.016	.019	.022	.028	.031	.037	.042	.048	.054	.063	.071
75000.	.012	.015	.018	.021	.026	.029	.034	.040	.045	.050	.058	.066
80000.		.014	.017	.020	.024	.028	.032	.037	.042	.047	.054	.062
85000.		.013	.016	.019	.023	.026	.031	.035	.040	.045	.050	.056
90000.		.012	.015	.018	.022	.025	.029	.033	.038	.043	.048	.054
95000.		.012	.014	.017	.021	.023	.028	.032	.036	.042	.047	.052
100000.		.011	.013	.016	.020	.022	.026	.030	.034	.039	.044	.049

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.
50000.	.015	.018	.023	.028	.033	.038	.044	.051	.057	.064	.076	.083
55000.	.017	.021	.026	.030	.035	.042	.048	.054	.061	.068	.079	.087
60000.	.016	.019	.024	.028	.033	.038	.045	.051	.058	.064	.075	.083
65000.	.015	.018	.023	.027	.030	.036	.042	.048	.054	.061	.072	.080
70000.	.014	.017	.021	.024	.028	.034	.039	.045	.050	.057	.067	.075
75000.	.013	.016	.020	.022	.026	.031	.037	.042	.048	.054	.062	.070
80000.		.015	.019	.021	.025	.030	.034	.039	.044	.050	.058	.066
85000.		.014	.017	.020	.023	.028	.032	.036	.042	.047	.054	.062
90000.		.013	.017	.019	.022	.026	.031	.036	.041	.047	.054	.062
95000.		.012	.016	.018	.021	.025	.029	.034	.039	.044	.050	.057
100000.		.012	.015	.017	.020	.024	.028	.032	.037	.042	.048	.054

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	375.	400.	500.	550.	600.	650.	700.	750.	800.
50000.	.018	.024	.027	.034	.041	.053	.060	.067	.074	.083	.095	.102
55000.	.019	.025	.031	.037	.043	.055	.062	.069	.076	.085	.097	.104
60000.	.017	.023	.028	.034	.040	.051	.058	.065	.072	.081	.093	.100
65000.	.016	.021	.026	.032	.038	.048	.055	.062	.069	.078	.089	.096
70000.	.015	.020	.024	.030	.036	.045	.052	.059	.066	.075	.086	.093
75000.		.019	.023	.028	.032	.040	.047	.054	.061	.070	.081	.088
80000.		.017	.021	.026	.031	.039	.046	.053	.060	.069	.079	.086
85000.		.016	.020	.025	.030	.037	.044	.051	.058	.067	.077	.084
90000.		.016	.019	.023	.028	.035	.041	.048	.055	.064	.074	.081
95000.		.015	.018	.022	.027	.034	.040	.047	.054	.063	.073	.080
100000.		.017	.021	.025	.030	.037	.043	.050	.057	.066	.076	.083

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	325.	350.	375.	400.	425.	450.	500.	550.	600.	650.	700.
50000.	.021	.027	.034	.038	.043	.049	.055	.061	.067	.074	.083	.095	.102	.109
60000.		.023	.028	.034	.039	.045	.051	.057	.063	.070	.079	.091	.098	.105
70000.			.025	.030	.036	.041	.047	.053	.059	.066	.075	.086	.093	.100
80000.				.023	.028	.034	.040	.046	.052	.059	.068	.079	.086	.093
90000.					.021	.026	.032	.038	.044	.050	.058	.069	.076	.083
100000.						.019	.024	.030	.036	.042	.050	.060	.067	.074

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	275.	300.	325.	350.	375.	400.	425.	450.	500.	550.	600.	650.	700.
50000.	.030	.034	.041	.045	.050	.055	.061	.067	.074	.083	.095	.102	.109	.116
60000.		.029	.035	.040	.045	.050	.056	.062	.068	.075	.086	.093	.100	.107
70000.			.028	.033	.038	.043	.048	.054	.060	.067	.078	.085	.092	.099
80000.				.027	.032	.037	.042	.047	.053	.059	.069	.076	.083	.090
90000.					.026	.031	.036	.041	.046	.052	.062	.069	.076	.083
100000.						.025	.030	.035	.040	.046	.056	.063	.070	.077



TABLE 17 GUST SENSITIVITY OF F-111 @ 72° SWEEP

DUST SENSITIVITY (G/SEC/GAL)

AIRCRAFT TYPE: F-117 ZE DUN SHEEP

ALTITUDE: 0. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.010	.012	.013	.013	.014	.015	.020	.022	.025	.028	.032	.036	.038	.040
35000.	.008	.011	.012	.014	.016	.019	.020	.023	.026	.030	.033	.036	.038	.039
20000.	.006	.010	.011	.012	.015	.017	.019	.021	.024	.027	.031	.032	.034	.034
15000.	.007	.008	.011	.012	.016	.018	.019	.022	.025	.028	.030	.032	.033	.033
10000.	.008	.008	.010	.011	.013	.014	.016	.018	.021	.024	.026	.028	.029	.029
7500.	.008	.008	.010	.011	.012	.014	.015	.017	.019	.022	.024	.026	.027	.028
5000.	.007	.008	.010	.011	.013	.014	.016	.018	.021	.024	.026	.028	.029	.029
2500.	.007	.008	.009	.011	.012	.013	.015	.017	.020	.022	.024	.025	.025	.025
1000.	.007	.008	.008	.010	.011	.013	.014	.016	.018	.021	.022	.023	.024	.024
500.	.006	.007	.008	.010	.011	.012	.014	.016	.018	.020	.021	.022	.022	.022
100000.	.007	.008	.008	.010	.011	.011	.013	.015	.017	.018	.020	.021	.021	.021

ALTITUDE: 10000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.010	.012	.014	.016	.019	.020	.024	.027	.031	.035	.038	.043	.044	.044
35000.	.008	.011	.012	.014	.016	.018	.022	.025	.028	.032	.036	.040	.041	.041
20000.	.006	.010	.012	.013	.015	.017	.020	.023	.026	.030	.033	.037	.037	.038
15000.	.008	.008	.011	.012	.014	.016	.018	.021	.025	.027	.031	.034	.035	.036
10000.	.008	.009	.010	.011	.013	.015	.017	.020	.023	.026	.029	.032	.032	.033
7500.	.008	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.030	.031
5000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.030	.031
2500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.030	.031
1000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.030	.031
500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.030	.031
100000.	.007	.008	.008	.010	.011	.012	.014	.016	.018	.020	.022	.023	.024	.024

ALTITUDE: 20000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.011	.014	.016	.018	.021	.023	.028	.030	.035	.038	.043	.048	.049	.049
35000.	.009	.011	.013	.015	.017	.021	.024	.027	.031	.034	.038	.042	.043	.043
20000.	.006	.010	.012	.013	.015	.018	.021	.025	.028	.032	.036	.040	.041	.041
15000.	.008	.008	.011	.012	.015	.018	.021	.025	.028	.032	.036	.040	.041	.041
10000.	.008	.009	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.035
7500.	.008	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
5000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
2500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
1000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.024	.025	.026	.026

ALTITUDE: 30000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.010	.012	.014	.016	.021	.023	.028	.030	.035	.038	.043	.048	.049	.049
35000.	.009	.011	.013	.015	.018	.022	.025	.028	.032	.036	.040	.044	.045	.045
20000.	.006	.010	.012	.013	.015	.018	.021	.025	.028	.032	.036	.040	.041	.041
15000.	.008	.008	.011	.012	.015	.018	.021	.025	.028	.032	.036	.040	.041	.041
10000.	.008	.009	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.035
7500.	.008	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
5000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
2500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
1000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.024	.025	.026	.026

ALTITUDE: 40000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.010	.012	.014	.016	.021	.023	.028	.030	.035	.038	.043	.048	.049	.049
35000.	.009	.011	.013	.015	.018	.022	.025	.028	.032	.036	.040	.044	.045	.045
20000.	.006	.010	.012	.013	.015	.018	.021	.025	.028	.032	.036	.040	.041	.041
15000.	.008	.008	.011	.012	.015	.018	.021	.025	.028	.032	.036	.040	.041	.041
10000.	.008	.009	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.035
7500.	.008	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
5000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
2500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
1000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.024	.025	.026	.026

ALTITUDE: 50000. FEET

CALIBRATED AIRPRED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	775.	790.	800.
50000.	.010	.012	.014	.016	.021	.023	.028	.030	.035	.038	.043	.048	.049	.049
35000.	.009	.011	.013	.015	.018	.022	.025	.028	.032	.036	.040	.044	.045	.045
20000.	.006	.010	.012	.013	.015	.018	.021	.025	.028	.032	.036	.040	.041	.041
15000.	.008	.008	.011	.012	.015	.018	.021	.025	.028	.032	.036	.040	.041	.041
10000.	.008	.009	.010	.011	.013	.015	.018	.022	.024	.027	.031	.034	.035	.035
7500.	.008	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
5000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
2500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
1000.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
500.	.007	.008	.010	.011	.012	.014	.015	.018	.021	.024	.027	.030	.031	.031
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.022	.024	.025	.026	.026

TABLE 18 GUST SENSITIVITY OF FB-111 @ 16° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)														
AIRCRAFT TYPE: FB-111 16 DEG SWEEP														
ALTITUDE: 0. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	270.	280.	310.	330.	340.	350.	360.	370.	380.	385.	390.	395.	400.
50000.	.021	.022	.024	.026	.028	.029	.031	.032	.033	.034	.035	.035	.036	.037
60000.		.019		.021	.022	.024	.025	.026	.027	.028	.029	.030	.030	.031
70000.			.018	.019	.021	.022	.022	.023	.024	.025	.025	.026	.026	.027
80000.				.017	.019	.019	.020	.021	.021	.022	.022	.023	.023	.024
90000.					.018	.017	.018	.018	.019	.020	.020	.020	.021	.021
100000.					.015	.015	.016	.017	.017	.018	.018	.018	.019	.019
110000.						.015	.015	.015	.015	.015	.015	.016	.016	.016
120000.							.015	.014	.015	.015	.015	.016	.016	.016
ALTITUDE: 10000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	270.	280.	310.	330.	340.	350.	360.	370.	380.	385.	390.	395.	400.
50000.	.021	.023	.026	.028	.030	.032	.033	.034	.036	.038	.038	.039	.040	.041
60000.		.020	.022	.024	.026	.027	.028	.029	.030	.032	.032	.033	.034	.035
70000.			.019	.020	.022	.023	.024	.025	.026	.027	.028	.028	.029	.030
80000.				.018	.020	.020	.021	.022	.023	.024	.025	.025	.026	.027
90000.					.017	.018	.018	.020	.021	.022	.022	.023	.023	.024
100000.						.018	.018	.019	.020	.020	.020	.020	.021	.021
110000.						.018	.017	.018	.018	.019	.018	.018	.018	.020
120000.							.016	.016	.017	.018	.017	.017	.018	.018
ALTITUDE: 20000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	270.	280.	310.	330.	340.	350.	360.	370.	380.	385.	390.	395.	400.
50000.	.023	.025	.028	.031	.034	.036	.038	.041	.044	.047	.049	.052	.054	.057
60000.		.021	.023	.026	.029	.030	.032	.035	.037	.040	.042	.044	.046	.048
70000.			.020	.022	.025	.026	.028	.030	.032	.035	.036	.038	.040	.042
80000.				.020	.022	.023	.025	.026	.028	.031	.032	.033	.035	.037
90000.					.020	.021	.022	.023	.025	.027	.028	.030	.031	.033
100000.						.021	.022	.023	.025	.026	.026	.027	.028	.030
110000.						.019	.020	.021	.023	.023	.024	.025	.026	.028
120000.							.019	.019	.021	.021	.022	.023	.024	.025
ALTITUDE: 30000. FEET														
CALIBRATED AIRSPEED (KNOTS CAS)														
WEIGHT	250.	280.	285.	270.	275.	280.	285.	290.	295.	300.	305.	310.	315.	320.
50000.	.023	.027	.027	.028	.029	.030	.032	.033	.034	.036	.037	.039	.041	.044
60000.		.023	.023	.024	.025	.026	.027	.028	.029	.030	.031	.033	.035	.037
70000.			.023	.024	.025	.026	.027	.028	.029	.030	.031	.033	.035	.037
80000.				.023	.024	.025	.026	.027	.028	.029	.030	.031	.033	.035
90000.					.023	.024	.025	.026	.027	.028	.029	.030	.031	.033
100000.						.023	.024	.025	.026	.027	.028	.029	.030	.032
110000.							.023	.024	.025	.026	.027	.028	.029	.031
120000.								.023	.024	.025	.026	.027	.028	.030

TABLE 19 GUST SENSITIVITY OF FB-111 @ 26° SWEEP

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: FB-111 28 DEG SWEEP

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	310.	340.	370.	390.	410.	430.	450.	480.	470.	480.	490.	500.
50000.	.020	.022	.025	.028	.031	.033	.035	.038	.041	.043	.044	.045	.048	.050
80000.		.018	.021	.024	.026	.028	.030	.032	.035	.036	.037	.038	.041	.042
70000.		.018	.018	.020	.023	.024	.026	.028	.030	.031	.032	.034	.035	.037
80000.			.018	.018	.020	.022	.023	.025	.027	.028	.028	.030	.031	.033
90000.				.018	.018	.018	.021	.022	.024	.025	.026	.027	.028	.028
100000.				.015	.016	.017	.018	.020	.022	.022	.023	.024	.025	.026
110000.					.015	.016	.017	.018	.020	.021	.021	.022	.023	.024
120000.						.014	.015	.016	.017	.018	.018	.020	.021	.022

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	370.	380.	410.	430.	450.	470.	480.	500.	510.	515.	520.
50000.	.020	.025	.031	.034	.037	.040	.044	.048	.052	.055	.057	.058	.063	.063
80000.		.021	.025	.028	.031	.034	.037	.042	.047	.055	.060	.066	.071	.080
70000.		.018	.023	.025	.027	.028	.032	.038	.041	.048	.052	.058	.062	.070
80000.		.018	.020	.022	.024	.025	.028	.032	.038	.042	.048	.051	.055	.062
90000.			.018	.018	.021	.023	.026	.028	.032	.038	.041	.046	.050	.056
100000.			.018	.018	.021	.023	.026	.028	.034	.038	.042	.045	.051	
110000.			.018	.018	.018	.021	.024	.027	.031	.034	.038	.041	.047	
120000.			.015	.016	.018	.018	.018	.022	.025	.028	.032	.035	.038	.043

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	300.	350.	400.	420.	430.	435.	440.	450.	460.	470.	480.	510.	540.
50000.	.021	.027	.035	.036	.041	.047	.050	.053	.058	.059	.063	.063	.063	.047
80000.		.023	.030	.043	.052	.060	.068	.080	.078	.085	.098	.093	.044	.038
70000.		.020	.028	.037	.045	.052	.058	.068	.068	.057	.051	.048	.038	.034
80000.			.023	.032	.040	.048	.053	.062	.058	.050	.045	.041	.034	.030
90000.			.020	.029	.036	.041	.047	.055	.053	.045	.040	.037	.030	.027
100000.			.018	.028	.032	.037	.043	.050	.048	.041	.038	.033	.027	.024
110000.				.024	.028	.034	.038	.048	.044	.037	.033	.030	.025	.022
120000.				.022	.027	.031	.036	.042	.040	.034	.030	.028	.023	.020

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	310.	340.	350.	355.	360.	370.	380.	390.	400.	430.	460.	490.
50000.	.023	.030	.043	.044	.058	.065	.078	.072	.081	.094	.090	.041	.038	.034
80000.		.025	.038	.041	.048	.055	.066	.061	.052	.046	.042	.034	.030	.028
70000.		.022	.031	.035	.041	.048	.057	.053	.045	.040	.038	.030	.028	.024
80000.			.028	.031	.038	.042	.051	.047	.038	.035	.032	.028	.023	.021
90000.				.028	.032	.038	.045	.042	.035	.031	.028	.023	.020	.018
100000.					.034	.041	.038		.032	.028	.026	.021	.018	.017
110000.									.028	.026	.023	.019	.017	.015
120000.										.021	.018	.015	.014	

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	250.	280.	270.	280.	285.	290.	295.	300.	310.	320.	330.	340.	350.	360.
50000.	.028	.033	.038	.048	.058	.071	.081	.094	.048	.040	.037	.034	.030	.028
80000.				.038	.047	.060	.051	.045	.038	.034	.031	.028	.025	.023
70000.								.033	.028	.028	.025	.022	.020	
80000.										.023	.022		.018	.016
90000.												.017	.016	
100000.													.016	.014

TABLE 20 GUST SENSITIVITY OF FB-111 @ 50° SWEEP

GUST SENSITIVITY (G'S/FT/SEC GUST)													
AIRCRAFT TYPE: FB-111 50 DEG SWEEP													
ALTITUDE: 0, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
50000.	.018	.023	.031	.038	.043	.052	.057	.064	.071	.078	.085	.093	.094
60000.		.018	.028	.030	.038	.044	.048	.055	.061	.067	.073	.073	.063
70000.		.017	.023	.028	.031	.038	.043	.048	.053	.058	.064	.064	.053
80000.		.015	.020	.023	.028	.034	.038	.043	.047	.052	.057	.057	.048
90000.		.013	.018	.021	.025	.030	.034	.038	.043	.047	.051	.051	.044
100000.		.012	.018	.018	.022	.028	.031	.035	.038	.043	.047	.047	.040
110000.		.011	.015	.017	.021	.025	.028	.032	.035	.038	.043	.043	.038
120000.			.014	.018	.018	.023	.028	.028	.033	.038	.040	.040	.033
ALTITUDE: 10000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	300.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
50000.	.018	.024	.028	.034	.042	.048	.053	.059	.067	.077	.088	.098	.091
60000.		.020	.024	.028	.036	.038	.045	.051	.057	.068	.078	.088	.078
70000.		.017	.021	.025	.031	.034	.038	.044	.050	.057	.068	.078	.068
80000.		.015	.018	.022	.027	.030	.035	.039	.044	.051	.063	.073	.063
90000.		.014	.018	.020	.024	.027	.031	.035	.039	.045	.058	.068	.058
100000.		.012	.015	.018	.022	.024	.028	.032	.036	.041	.055	.065	.055
110000.		.011	.013	.018	.020	.022	.028	.032	.036	.041	.055	.065	.055
120000.			.012	.015	.018	.020	.024	.027	.030	.035	.048	.058	.048
ALTITUDE: 20000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	300.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.	900.
50000.	.017	.025	.032	.044	.051	.058	.064	.068	.073	.087	.093	.093	.084
60000.		.021	.027	.037	.043	.048	.054	.058	.064	.078	.084	.084	.074
70000.		.018	.023	.032	.037	.042	.047	.053	.058	.072	.078	.078	.068
80000.		.016	.021	.028	.033	.037	.042	.048	.053	.067	.073	.073	.063
90000.		.014	.018	.025	.028	.034	.037	.043	.048	.062	.068	.068	.058
100000.		.013	.017	.023	.027	.030	.034	.031	.027	.024	.022	.021	.018
110000.			.015	.021	.024	.028	.031	.028	.025	.022	.020	.018	.017
120000.			.014	.018	.022	.025	.028	.028	.023	.020	.018	.017	.015
ALTITUDE: 30000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	850.
50000.	.017	.023	.025	.028	.037	.047	.052	.057	.064	.072	.078	.087	.077
60000.		.018	.021	.024	.031	.040	.044	.048	.051	.058	.067	.077	.067
70000.		.016	.018	.021	.027	.034	.038	.040	.043	.050	.058	.068	.058
80000.			.018	.022	.028	.035	.038	.040	.043	.050	.058	.068	.058
90000.				.018	.021	.027	.030	.034	.037	.043	.050	.058	.048
100000.					.018	.024	.027	.031	.034	.040	.047	.055	.045
110000.					.017	.022	.025	.028	.031	.037	.044	.052	.042
120000.						.020	.023	.026	.029	.035	.042	.050	.040
ALTITUDE: 40000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	270.	290.	310.	330.	350.	370.	400.	450.	500.	550.	600.	700.
50000.	.020	.023	.027	.034	.041	.046	.054	.062	.078	.093	.108	.122	.121
60000.			.023	.028	.034	.038	.044	.051	.067	.082	.097	.111	.110
70000.				.025	.030	.034	.038	.043	.058	.073	.088	.102	.101
80000.					.028	.032	.036	.040	.055	.070	.085	.099	.098
90000.						.023	.028	.032	.047	.062	.077	.091	.090
100000.							.018	.023	.038	.053	.068	.082	.081
110000.							.017	.022	.037	.052	.067	.081	.080
120000.								.013	.028	.043	.058	.072	.071
ALTITUDE: 50000, FEET													
CALIBRATED AIRSPEED (KNOTS CAS)													
WEIGHT	250.	270.	290.	310.	330.	350.	370.	400.	450.	500.	550.	600.	700.
50000.	.035	.045	.054	.064	.074	.084	.094	.104	.114	.124	.134	.144	.143
60000.		.024	.029	.034	.039	.044	.049	.054	.064	.074	.084	.094	.093
70000.			.018	.023	.028	.033	.038	.043	.053	.063	.073	.083	.082
80000.				.015	.020	.025	.030	.035	.045	.055	.065	.075	.074
90000.					.013	.018	.023	.028	.038	.048	.058	.068	.067
100000.						.011	.016	.021	.031	.041	.051	.061	.060
110000.							.008	.013	.023	.033	.043	.053	.052
120000.								.008	.018	.028	.038	.048	.047

TABLE 21 GUST SENSITIVITY OF FB-111 @ 72° SWEEP

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: FB-111 72 DEG SWEEP

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	800.
50000.	.010	.013	.015	.017	.019	.022	.024	.027	.031	.036	.040	.042	.044	.046
60000.	.008	.011	.012	.014	.016	.018	.020	.023	.026	.030	.034	.036	.037	.039
70000.	.008	.008	.011	.012	.014	.016	.018	.020	.023	.026	.030	.031	.033	.035
80000.	.008	.010	.011	.012	.014	.016	.018	.020	.023	.026	.028	.029	.029	.029
90000.	.007	.008	.010	.011	.012	.014	.016	.018	.021	.024	.025	.026	.026	.026
100000.	.007	.008	.008	.010	.011	.013	.014	.016	.018	.021	.022	.023	.023	.024
110000.	.007	.008	.008	.008	.010	.012	.013	.015	.017	.020	.021	.021	.021	.022
120000.	.008	.007	.008	.008	.008	.011	.012	.014	.016	.018	.018	.019	.020	.020

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	800.
50000.	.011	.013	.015	.017	.020	.022	.025	.028	.033	.038	.044	.046	.048	.051
60000.	.008	.011	.013	.015	.017	.019	.022	.026	.029	.033	.037	.041	.042	.043
70000.	.008	.008	.011	.013	.014	.016	.018	.022	.026	.029	.032	.036	.037	.038
80000.	.008	.008	.010	.011	.013	.014	.017	.020	.023	.026	.028	.032	.033	.033
90000.	.007	.008	.010	.011	.013	.015	.018	.020	.023	.025	.028	.028	.028	.029
100000.	.007	.008	.008	.010	.012	.014	.016	.018	.021	.023	.025	.026	.026	.027
110000.	.007	.008	.008	.008	.010	.012	.014	.016	.017	.018	.021	.024	.024	.025
120000.	.007	.007	.008	.008	.010	.011	.013	.015	.017	.018	.019	.022	.022	.023

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	800.
50000.	.011	.013	.015	.018	.021	.023	.026	.030	.035	.040	.046	.048	.050	.053
60000.	.008	.011	.013	.015	.018	.021	.025	.028	.032	.036	.041	.038	.038	.037
70000.	.008	.008	.011	.013	.015	.018	.021	.024	.028	.031	.036	.033	.033	.032
80000.	.008	.010	.011	.013	.016	.018	.021	.024	.028	.031	.028	.028	.028	.028
90000.	.007	.008	.010	.012	.014	.017	.019	.022	.025	.028	.025	.026	.026	.026
100000.	.007	.008	.008	.011	.013	.015	.017	.020	.022	.025	.024	.023	.023	.023
110000.	.007	.008	.008	.010	.012	.014	.016	.018	.020	.023	.022	.021	.021	.021
120000.	.007	.008	.008	.008	.011	.013	.014	.016	.018	.021	.020	.018	.018	.018

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	800.
50000.	.011	.013	.015	.018	.020	.024	.026	.030	.035	.040	.046	.048	.050	.053
60000.	.008	.011	.013	.015	.017	.020	.023	.027	.031	.035	.041	.038	.038	.037
70000.	.008	.011	.014	.017	.020	.023	.027	.028	.028	.028	.024	.024	.024	.024
80000.	.008	.010	.012	.015	.018	.020	.023	.025	.023	.023	.022	.021	.021	.021
90000.	.007	.008	.011	.013	.016	.018	.021	.022	.021	.020	.018	.018	.018	.018
100000.	.008	.010	.012	.014	.016	.018	.019	.020	.019	.018	.017	.017	.017	.017
110000.	.007	.008	.011	.013	.015	.017	.018	.017	.018	.017	.016	.016	.016	.016
120000.	.007	.008	.010	.012	.014	.016	.016	.017	.016	.016	.015	.014	.014	.014

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	800.
50000.	.011	.014	.018	.022	.026	.031	.036	.042	.047	.052	.058	.062	.065	.068
60000.	.008	.012	.015	.018	.022	.026	.028	.032	.034	.037	.042	.041	.041	.041
70000.	.008	.010	.013	.016	.019	.022	.022	.026	.026	.026	.018	.018	.018	.018
80000.	.008	.011	.014	.018	.018	.018	.018	.018	.017	.017	.018	.018	.018	.018
90000.	.010	.012	.015	.017	.017	.017	.016	.015	.015	.015	.014	.014	.014	.014
100000.	.008	.011	.013	.016	.016	.016	.014	.014	.014	.013	.013	.013	.013	.013
110000.	.008	.010	.012	.014	.014	.014	.013	.013	.012	.012	.012	.012	.012	.012
120000.	.008	.008	.011	.013	.013	.013	.012	.012	.011	.011	.011	.011	.011	.011

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	800.
50000.	.012	.015	.018	.021	.025	.024	.023	.022	.021	.021	.020	.020	.020	.020
60000.	.013	.015	.018	.021	.020	.019	.018	.018	.017	.017	.017	.017	.017	.017
70000.	.011	.013	.015	.018	.017	.016	.016	.015	.015	.015	.014	.014	.014	.014
80000.	.011	.013	.016	.018	.015	.014	.014	.013	.013	.013	.013	.013	.013	.012
90000.	.010	.012	.014	.013	.013	.012	.012	.012	.011	.011	.011	.011	.011	.011
100000.	.011	.013	.012	.011	.011	.011	.011	.010	.010	.010	.010	.010	.010	.010
110000.	.010	.015	.011	.010	.010	.010	.010	.010	.008	.008	.008	.008	.008	.008
120000.	.011	.010	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008	.008

TABLE 22 GUST SENSITIVITY OF KC-135

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: KC-135

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.034	.040	.047	.054	.061	.068	.074	.078	.083	.088	.091	.094
120000.	.028	.035	.041	.047	.054	.061	.065	.068	.073	.078	.081	.084
140000.	.026	.031	.037	.042	.048	.054	.058	.062	.066	.069	.073	.078
160000.	.024	.028	.033	.038	.043	.048	.052	.056	.061	.064	.068	.071
180000.	.021	.026	.030	.035	.040	.045	.049	.051	.054	.058	.060	.063
200000.	.024	.028	.032	.036	.041	.044	.047	.050	.052	.053	.055	.057
220000.	.022	.025	.028	.034	.038	.041	.043	.046	.048	.050	.051	.053
240000.	.020	.024	.027	.031	.036	.039	.040	.043	.045	.046	.048	.050
260000.	.018	.022	.025	.028	.033	.035	.036	.040	.042	.043	.045	.047
280000.	.021	.024	.027	.031	.035	.038	.039	.043	.045	.046	.048	.049
300000.	.020	.023	.026	.029	.031	.033	.036	.037	.038	.040	.041	.043

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.037	.042	.048	.053	.058	.064	.068	.074	.078	.083	.086	.089
120000.	.032	.036	.041	.047	.052	.058	.060	.065	.070	.073	.078	.082
140000.	.028	.032	.037	.041	.046	.050	.053	.057	.062	.064	.067	.070
160000.	.025	.029	.033	.037	.041	.045	.048	.052	.056	.058	.060	.063
180000.	.023	.026	.030	.033	.037	.040	.043	.047	.051	.053	.055	.057
200000.	.024	.027	.031	.034	.037	.040	.043	.046	.048	.050	.053	.055
220000.	.022	.025	.028	.032	.034	.037	.040	.043	.045	.047	.048	.051
240000.	.020	.023	.026	.028	.032	.034	.037	.040	.041	.043	.045	.047
260000.	.022	.024	.027	.028	.032	.034	.037	.039	.040	.042	.044	.047
280000.	.020	.023	.026	.028	.030	.032	.035	.036	.038	.039	.040	.042
300000.	.018	.021	.024	.026	.028	.030	.032	.033	.034	.036	.037	.041

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.040	.044	.048	.052	.057	.062	.065	.071	.075	.078	.082	.087
120000.	.034	.038	.041	.045	.048	.054	.056	.062	.065	.068	.071	.075
140000.	.030	.033	.036	.040	.043	.047	.048	.052	.054	.057	.060	.063
160000.	.027	.029	.032	.035	.038	.042	.044	.048	.051	.054	.057	.060
180000.	.024	.027	.029	.032	.035	.038	.040	.044	.046	.048	.051	.054
200000.	.024	.027	.029	.032	.035	.038	.039	.043	.044	.047	.048	.050
220000.	.022	.024	.027	.028	.032	.033	.035	.037	.038	.041	.043	.045
240000.	.023	.025	.027	.030	.031	.032	.034	.036	.038	.040	.042	.045
260000.	.021	.023	.025	.028	.029	.030	.032	.033	.035	.037	.038	.042
280000.	.021	.023	.025	.027	.029	.030	.032	.033	.035	.036	.037	.039
300000.	.020	.022	.024	.025	.026	.028	.028	.029	.031	.033	.035	.037

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.043	.046	.048	.051	.053	.058	.060	.063	.067	.069	.071	.074
120000.	.037	.039	.041	.043	.046	.048	.051	.054	.056	.058	.061	.063
140000.	.032	.034	.036	.038	.040	.042	.045	.047	.049	.050	.054	.056
160000.	.028	.030	.032	.034	.036	.037	.040	.042	.043	.045	.048	.050
180000.	.026	.027	.028	.030	.032	.034	.036	.038	.040	.042	.043	.045
200000.	.025	.026	.027	.028	.031	.032	.034	.036	.037	.038	.039	.041
220000.	.024	.025	.027	.028	.030	.032	.033	.034	.035	.036	.037	.038
240000.	.023	.024	.025	.027	.028	.029	.030	.031	.032	.033	.034	.035
260000.	.024	.025	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036
280000.	.024	.025	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036
300000.	.024	.025	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	220.	230.	240.	250.	260.	270.	280.	290.	300.	310.	320.	330.
100000.	.048	.051	.052	.055	.057	.060	.062	.064	.067	.069	.071	.074
120000.	.041	.043	.045	.046	.048	.050	.052	.053	.057	.058	.061	.063
140000.	.036	.037	.038	.040	.042	.044	.046	.048	.050	.051	.054	.056
160000.	.032	.033	.034	.036	.037	.039	.040	.042	.044	.045	.048	.050
180000.	.030	.031	.032	.033	.035	.036	.038	.039	.040	.041	.043	.045
200000.	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039
220000.	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038
240000.	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037

TABLE 23 GUST SENSITIVITY OF SR-71

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: SR-71

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	770.	780.	800.
70000.	.025	.030	.035	.041	.048	.052	.058	.068	.078	.087	.093	.094	.094	.093
80000.	.023	.027	.032	.037	.042	.048	.054	.061	.068	.080	.086	.086	.087	.087
90000.	.021	.025	.029	.034	.039	.044	.049	.056	.064	.074	.079	.080	.080	.081
100000.	.019	.023	.027	.031	.036	.040	.045	.052	.059	.069	.074	.074	.075	.075
110000.	.018	.021	.025	.029	.033	.037	.042	.048	.055	.065	.069	.070	.070	.070
120000.	.017	.020	.024	.027	.031	.035	.039	.045	.052	.061	.065	.065	.066	.066
130000.	.016	.019	.022	.025	.029	.033	.037	.042	.048	.057	.061	.062	.062	.062
140000.	.015	.018	.021	.024	.027	.031	.035	.040	.046	.054	.059	.059	.059	.059

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	820.
70000.	.027	.030	.033	.038	.044	.051	.058	.068	.080	.088	.098	.098	.098	.098
80000.	.024	.027	.029	.035	.040	.046	.053	.062	.073	.079	.080	.081	.081	.082
90000.	.022	.024	.027	.031	.036	.042	.049	.057	.067	.072	.073	.074	.074	.075
100000.	.020	.022	.025	.029	.033	.038	.044	.052	.062	.067	.068	.068	.068	.068
110000.	.019	.021	.023	.027	.031	.036	.041	.048	.058	.062	.063	.063	.063	.064
120000.	.017	.019	.021	.025	.029	.033	.038	.045	.054	.059	.059	.059	.059	.059
130000.	.016	.018	.020	.023	.027	.031	.036	.042	.051	.055	.055	.055	.055	.055
140000.	.015	.017	.019	.022	.025	.029	.034	.040	.048	.052	.052	.052	.052	.052

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	820.
70000.	.028	.032	.035	.041	.048	.058	.071	.078	.078	.079	.080	.080	.081	.081
80000.	.026	.029	.031	.037	.044	.052	.064	.070	.071	.071	.072	.072	.073	.073
90000.	.023	.026	.028	.033	.040	.047	.058	.064	.064	.065	.065	.065	.066	.066
100000.	.021	.024	.026	.031	.038	.043	.054	.058	.058	.058	.058	.058	.059	.059
110000.	.020	.022	.024	.029	.033	.040	.050	.055	.055	.055	.055	.055	.055	.055
120000.	.018	.020	.022	.026	.031	.037	.046	.051	.051	.051	.051	.051	.051	.051
130000.	.017	.018	.021	.024	.029	.035	.043	.047	.047	.047	.047	.048	.048	.048
140000.	.016	.018	.019	.023	.027	.033	.041	.045	.045	.045	.044	.044	.045	.045

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	820.
70000.	.031	.034	.037	.043	.050	.058	.068	.078	.088	.088	.088	.088	.088	.088
80000.	.027	.030	.033	.041	.047	.057	.061	.061	.061	.061	.061	.062	.062	.062
90000.	.025	.027	.030	.037	.047	.055	.055	.055	.055	.055	.055	.056	.056	.056
100000.	.022	.025	.027	.034	.043	.050	.050	.050	.050	.050	.050	.050	.051	.051
110000.	.020	.023	.025	.031	.040	.048	.048	.048	.048	.048	.048	.048	.048	.048
120000.	.019	.021	.023	.029	.037	.043	.043	.043	.043	.043	.043	.043	.043	.043
130000.	.018	.020	.022	.027	.034	.040	.040	.040	.040	.040	.040	.040	.040	.040
140000.	.016	.018	.020	.025	.032	.037	.037	.037	.037	.037	.037	.037	.037	.037

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	820.
70000.	.033	.037	.040	.047	.057	.067	.077	.087	.087	.087	.087	.087	.087	.087
80000.	.029	.033	.036	.043	.051	.051	.051	.050	.051	.051	.051	.050	.050	.050
90000.	.026	.030	.034	.040	.048	.048	.048	.048	.048	.048	.048	.048	.048	.048
100000.	.024	.027	.031	.042	.042	.041	.041	.041	.041	.041	.041	.041	.041	.040
110000.	.022	.025	.029	.038	.038	.038	.038	.038	.037	.037	.037	.037	.037	.037
120000.	.020	.023	.026	.035	.035	.035	.035	.035	.034	.034	.034	.034	.034	.034
130000.	.019	.021	.024	.033	.033	.032	.032	.032	.032	.032	.032	.032	.032	.031
140000.	.017	.020	.023	.031	.030	.030	.030	.030	.030	.030	.030	.030	.029	.029

ALTITUDE: 50000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

HEIGHT	250.	275.	300.	350.	400.	450.	500.	550.	600.	650.	700.	750.	800.	820.
70000.	.038	.047	.047	.047	.047	.048	.048	.048	.048	.048	.048	.048	.048	.048
80000.	.035	.042	.042	.041	.041	.041	.041	.041	.041	.040	.040	.040	.039	.039
90000.	.031	.037	.038	.037	.037	.036	.036	.036	.036	.036	.036	.035	.035	.035
100000.	.028	.034	.034	.034	.033	.033	.033	.033	.033	.033	.032	.032	.032	.031
110000.	.026	.031	.031	.031	.030	.030	.030	.030	.030	.030	.029	.029	.029	.029
120000.	.024	.029	.029	.028	.028	.028	.028	.028	.027	.027	.027	.027	.027	.026
130000.	.022	.026	.027	.026	.026	.026	.026	.026	.025	.025	.025	.025	.025	.024
140000.	.020	.025	.025	.024	.024	.024	.024	.024	.024	.023	.023	.023	.023	.022

TABLE 24 GUST SENSITIVITY OF T-34

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: T-34

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	130.	140.	150.	160.	170.	180.	190.	200.	210.	220.	230.	240.	250.
2500.	.039	.043	.048	.049	.053	.058	.060	.063	.066	.070	.073	.077	.080	.084
3000.	.034	.037	.040	.043	.046	.048	.052	.055	.058	.061	.064	.067	.070	.073
3500.	.030	.033	.036	.038	.041	.043	.046	.048	.051	.054	.057	.059	.062	.065
4000.	.027	.030	.032	.034	.037	.039	.041	.044	.046	.048	.051	.053	.056	.058
4500.		.027	.028	.031	.033	.035	.038	.040	.042	.044	.046	.048	.051	.053
5000.		.025	.027	.028	.030	.032	.034	.036	.038	.040	.042	.044	.046	.048
5500.			.024	.026	.028	.030	.032	.034	.035	.037	.038	.041	.043	.045

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	130.	140.	150.	160.	170.	180.	190.	200.	210.	220.	230.	240.	250.
2500.	.042	.048	.050	.053	.057	.061	.064	.068	.072	.076	.078	.083	.087	.091
3000.	.037	.040	.043	.046	.048	.052	.056	.058	.062	.065	.068	.072	.075	.079
3500.	.032	.035	.038	.040	.043	.046	.048	.052	.055	.058	.060	.063	.066	.070
4000.	.028	.031	.034	.036	.039	.041	.044	.046	.048	.051	.054	.057	.059	.062
4500.		.028	.030	.033	.035	.037	.039	.042	.044	.046	.048	.051	.054	.056
5000.		.026	.028	.030	.032	.034	.036	.038	.040	.042	.045	.047	.049	.051
5500.			.025	.027	.028	.031	.033	.035	.037	.039	.041	.043	.045	.047

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	130.	140.	150.	160.	170.	180.	190.	200.	210.	220.	230.	240.	250.
2500.	.045	.048	.053	.057	.061	.065	.068	.073	.077	.081	.086	.090	.095	.100
3000.	.038	.042	.045	.048	.052	.055	.058	.063	.066	.070	.074	.077	.081	.085
3500.	.034	.037	.040	.043	.046	.048	.052	.055	.058	.061	.064	.068	.071	.075
4000.	.030	.033	.036	.038	.040	.043	.046	.048	.051	.054	.057	.060	.063	.067
4500.		.028	.032	.034	.036	.038	.041	.044	.046	.048	.052	.054	.057	.060
5000.		.027	.028	.031	.033	.035	.038	.040	.042	.044	.047	.049	.052	.054
5500.			.026	.028	.030	.032	.034	.036	.038	.041	.043	.045	.048	.050

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	130.	140.	150.	160.	170.	180.	190.	200.	210.	220.	230.	240.	250.
2500.	.048	.052	.056	.060	.065	.068	.074	.078	.083	.088	.094	.098	.104	.111
3000.	.041	.044	.048	.051	.055	.059	.063	.067	.071	.075	.080	.084	.089	.095
3500.	.035	.038	.041	.045	.048	.051	.055	.058	.062	.066	.069	.074	.078	.083
4000.	.031	.034	.037	.039	.042	.045	.048	.051	.055	.058	.062	.065	.069	.073
4500.		.030	.033	.035	.038	.041	.043	.046	.048	.052	.055	.058	.062	.066
5000.		.028	.030	.032	.034	.037	.038	.042	.044	.047	.050	.053	.056	.060
5500.			.027	.028	.032	.034	.036	.038	.041	.043	.046	.048	.052	.055

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	120.	140.	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.
2500.	.050	.060	.064	.070	.075	.080	.087	.093	.100	.106	.112	.117	.122	.128
3000.	.042	.050	.054	.058	.063	.068	.073	.078	.085	.092	.098	.104	.108	.115
3500.	.037	.044	.047	.051	.055	.058	.064	.068	.074	.079	.083	.088	.090	.095
4000.	.032	.038	.042	.045	.048	.052	.056	.060	.065	.070	.073	.078	.080	.084
4500.		.034	.037	.040	.043	.047	.050	.054	.058	.063	.065	.069	.071	.075
5000.		.031	.034	.036	.038	.042	.045	.048	.053	.057	.059	.062	.065	.068
5500.		.028	.031	.033	.036	.038	.041	.045	.048	.052	.054	.057	.059	.062



TABLE 25 GUST SENSITIVITY OF T-37 AND A-37

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: T-37 AND A-37

ALTITUDE: C. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.028	.033	.037	.041	.045	.050	.054	.058	.061	.063	.065	.068	.070	.073
6000.	.025	.028	.032	.035	.038	.043	.046	.050	.052	.054	.056	.058	.060	.063
7000.	.022	.025	.028	.031	.034	.037	.041	.044	.046	.047	.048	.051	.053	.055
8000.		.022	.025	.027	.030	.033	.036	.038	.041	.042	.044	.045	.047	.048
9000.			.022	.025	.027	.030	.032	.035	.036	.038	.039	.041	.042	.044
10000.			.020	.022	.025	.027	.028	.032	.033	.034	.036	.037	.038	.040
11000.			.018	.021	.023	.025	.027	.028	.030	.032	.033	.034	.035	.037
12000.				.018	.021	.023	.025	.027	.028	.028	.030	.031	.033	.034
13000.				.018	.021	.023	.025	.026	.027	.028	.028	.030	.031	.031
14000.					.018	.020	.022	.023	.024	.025	.026	.027	.028	.028

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.031	.035	.038	.043	.048	.053	.057	.062	.065	.068	.071	.073	.076	.078
6000.	.026	.030	.033	.037	.041	.045	.048	.053	.055	.058	.060	.063	.065	.068
7000.		.026	.028	.032	.036	.039	.043	.046	.048	.050	.052	.055	.057	.058
8000.		.023	.026	.028	.031	.035	.038	.041	.043	.045	.046	.048	.050	.052
9000.			.023	.026	.028	.031	.034	.037	.038	.040	.042	.043	.045	.047
10000.			.021	.023	.026	.028	.031	.033	.035	.036	.038	.038	.041	.043
11000.			.018	.021	.023	.026	.028	.031	.032	.033	.035	.036	.038	.038
12000.				.020	.022	.024	.026	.028	.028	.031	.032	.033	.035	.038
13000.				.018	.020	.022	.024	.026	.027	.028	.030	.031	.032	.033
14000.					.018	.020	.022	.024	.025	.027	.028	.028	.030	.031

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.032	.036	.041	.046	.051	.056	.062	.068	.071	.075	.078	.082	.085	.088
6000.	.027	.031	.035	.039	.043	.047	.052	.058	.060	.063	.066	.070	.073	.076
7000.		.027	.030	.034	.037	.041	.045	.050	.052	.055	.058	.061	.064	.067
8000.		.024	.027	.030	.033	.036	.040	.044	.046	.048	.051	.054	.057	.060
9000.			.024	.027	.028	.032	.036	.040	.041	.044	.046	.048	.051	.054
10000.			.021	.024	.027	.029	.033	.036	.038	.039	.041	.044	.046	.048
11000.				.022	.024	.027	.030	.033	.034	.036	.038	.040	.042	.044
12000.				.020	.022	.025	.027	.030	.032	.033	.035	.037	.039	.041
13000.				.018	.021	.023	.025	.028	.028	.031	.032	.034	.036	.038
14000.					.018	.021	.024	.026	.027	.028	.030	.032	.033	.035

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.033	.038	.043	.048	.053	.058	.063	.068	.074	.078	.082	.086	.090	.092
6000.	.028	.032	.036	.041	.046	.052	.055	.058	.062	.067	.072	.077	.082	.085
7000.		.028	.031	.035	.040	.045	.048	.051	.054	.058	.060	.062	.065	.068
8000.		.024	.028	.031	.035	.040	.042	.045	.048	.051	.053	.055	.057	.060
9000.			.025	.028	.031	.035	.038	.040	.043	.046	.047	.048	.051	.053
10000.			.022	.025	.028	.032	.034	.036	.038	.041	.043	.045	.046	.048
11000.				.023	.026	.029	.031	.033	.035	.036	.038	.041	.042	.044
12000.				.021	.024	.027	.029	.030	.032	.035	.036	.037	.038	.041
13000.				.020	.022	.025	.026	.028	.030	.032	.033	.035	.036	.038
14000.					.021	.023	.025	.026	.028	.030	.031	.032	.034	.035

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	150.	170.	190.	210.	230.	250.	270.	290.	300.	310.	320.	330.	340.	350.
5000.	.035	.039	.044	.049	.054	.059	.064	.069	.074	.078	.082	.086	.090	.092
6000.	.028	.031	.034	.037	.039	.042	.046	.049	.051	.054	.056	.058	.062	.065
7000.		.027	.028	.032	.034	.037	.039	.043	.044	.046	.048	.051	.053	.056
8000.			.026	.028	.030	.032	.035	.037	.039	.041	.043	.045	.047	.050
9000.				.025	.027	.028	.031	.033	.035	.036	.038	.040	.042	.044
10000.					.024	.026	.028	.030	.031	.033	.034	.036	.038	.040
11000.						.024	.025	.027	.028	.030	.031	.033	.035	.037
12000.							.023	.025	.026	.028	.029	.030	.032	.034
13000.								.023	.024	.025	.027	.028	.029	.031
14000.									.023	.024	.025	.026	.027	.028

**TABLE 26 GUST SENSITIVITY OF T-38 AND F-5**

WIND VELOCITY IN KNOTS (GUST)													
ALTIMETER 10,000 FEET													
CALIBRATED AIRSPEED (KNOTS (AS))													
WEIGHT	200	240	280	320	360	400	440	480	520	560	600	640	680
7000	.072	.071	.070	.069	.068	.067	.066	.065	.064	.063	.062	.061	.060
8000	.072	.072	.073	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083
9000	.073	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085
10000	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086
11000	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087
12000	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088
13000	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089
14000	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090
15000	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091
16000	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092
17000	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093
18000	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094
19000	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094	.095
20000	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094	.095	.096

ALTIMETER 10000, FEET													
CALIBRATED AIRSPEED (KNOTS (AS))													
WEIGHT	200	240	280	320	360	400	440	480	520	560	600	640	680
7000	.072	.072	.073	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083
8000	.072	.073	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084
9000	.073	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085
10000	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086
11000	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087
12000	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088
13000	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089
14000	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090
15000	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091
16000	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092
17000	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093
18000	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094
19000	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094	.095
20000	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094	.095	.096

ALTIMETER 20000, FEET													
CALIBRATED AIRSPEED (KNOTS (AS))													
WEIGHT	200	240	280	320	360	400	440	480	520	560	600	640	680
7000	.072	.072	.073	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083
8000	.072	.073	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084
9000	.073	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085
10000	.074	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086
11000	.075	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087
12000	.076	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088
13000	.077	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089
14000	.078	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090
15000	.079	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091
16000	.080	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092
17000	.081	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093
18000	.082	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094
19000	.083	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094	.095
20000	.084	.085	.086	.087	.088	.089	.090	.091	.092	.093	.094	.095	.096

TABLE 27 GUST SENSITIVITY OF T-39A

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: T-39A

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	210.	240.	270.	300.	330.	360.	390.	420.	440.	450.	460.	470.
10000.	.033	.038	.043	.051	.057	.064	.071	.078	.081	.088	.092	.085	.088
11000.	.031	.036	.042	.047	.053	.059	.066	.070	.075	.080	.085	.081	.084
12000.	.028	.034	.039	.044	.050	.055	.061	.065	.070	.074	.078	.082	.085
13000.	.027	.032	.038	.041	.046	.052	.057	.061	.065	.070	.074	.077	.082
14000.	.025	.030	.034	.038	.044	.048	.054	.059	.062	.066	.070	.072	.075
15000.	.024	.028	.032	.037	.041	.046	.051	.054	.058	.062	.066	.068	.071
16000.	.023	.026	.030	.035	.039	.043	.048	.051	.055	.059	.063	.065	.068
17000.	.021	.025	.029	.033	.037	.041	.046	.049	.052	.056	.060	.062	.064
18000.	.020	.024	.027	.031	.035	.039	.043	.046	.050	.053	.057	.059	.061
19000.	.023	.028	.030	.033	.037	.041	.044	.047	.051	.054	.058	.059	.060

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	210.	240.	270.	300.	330.	360.	390.	420.	440.	450.	460.	470.
10000.	.035	.044	.052	.062	.068	.078	.084	.090	.098	.107	.112	.117	.123
11000.	.033	.040	.048	.057	.064	.072	.077	.084	.091	.098	.104	.108	.114
12000.	.030	.037	.045	.053	.060	.067	.072	.078	.084	.092	.096	.101	.107
13000.	.028	.035	.042	.049	.056	.062	.067	.073	.079	.086	.090	.095	.100
14000.	.026	.033	.039	.046	.052	.058	.063	.068	.074	.081	.085	.089	.094
15000.	.025	.031	.037	.044	.049	.055	.060	.064	.070	.076	.080	.084	.088
16000.	.023	.029	.035	.041	.046	.052	.056	.061	.066	.072	.076	.080	.084
17000.	.022	.027	.033	.039	.044	.049	.053	.058	.063	.068	.072	.076	.080
18000.	.021	.026	.031	.037	.042	.047	.051	.055	.059	.063	.068	.072	.076
19000.	.023	.030	.035	.040	.045	.049	.052	.057	.062	.065	.069	.072	.077

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	210.	240.	270.	300.	330.	360.	390.	420.	440.	450.	460.	470.
10000.	.037	.044	.051	.058	.068	.074	.081	.088	.098	.106	.108	.113	.121
11000.	.034	.040	.047	.054	.062	.068	.075	.083	.087	.092	.098	.105	.112
12000.	.032	.037	.044	.050	.058	.063	.069	.077	.081	.086	.091	.097	.104
13000.	.029	.035	.041	.047	.054	.059	.064	.071	.075	.080	.085	.091	.098
14000.	.028	.033	.038	.044	.050	.055	.060	.067	.071	.075	.080	.085	.090
15000.	.026	.031	.036	.041	.047	.052	.057	.063	.068	.071	.075	.080	.085
16000.	.024	.029	.034	.039	.044	.049	.054	.059	.063	.067	.071	.076	.082
17000.	.023	.027	.032	.037	.042	.046	.051	.055	.059	.063	.067	.072	.077
18000.	.022	.026	.030	.035	.040	.044	.048	.053	.058	.060	.064	.068	.073
19000.	.023	.029	.033	.038	.042	.046	.051	.054	.057	.061	.065	.070	.076

ALTITUDE: 30000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	210.	240.	270.	300.	330.	360.	390.	420.	440.	450.	460.	470.
10000.	.038	.047	.055	.068	.070	.074	.078	.085	.091	.098	.103	.108	.114
11000.	.036	.043	.051	.060	.063	.068	.073	.078	.084	.091	.095	.100	.105
12000.	.033	.040	.047	.056	.058	.063	.067	.072	.078	.084	.089	.092	.097
13000.	.031	.037	.044	.052	.055	.058	.062	.067	.072	.078	.082	.085	.091
14000.	.029	.034	.041	.048	.051	.055	.059	.063	.068	.074	.077	.081	.085
15000.	.027	.032	.038	.045	.048	.051	.055	.059	.064	.069	.072	.076	.080
16000.	.025	.030	.036	.043	.045	.048	.052	.055	.060	.065	.068	.071	.075
17000.	.024	.028	.034	.040	.043	.046	.049	.052	.057	.062	.064	.068	.071
18000.	.023	.027	.032	.038	.041	.043	.046	.050	.054	.058	.061	.064	.068
19000.	.026	.031	.036	.038	.041	.044	.047	.051	.055	.058	.061	.064	.068

ALTITUDE: 40000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	180.	190.	200.	210.	220.	230.	240.	250.	260.	270.	280.	290.	300.
10000.	.042	.045	.048	.052	.056	.060	.063	.067	.072	.075	.078	.083	.088
11000.	.038	.041	.044	.047	.051	.055	.058	.062	.067	.070	.073	.078	.082
12000.	.035	.038	.041	.044	.047	.051	.054	.058	.063	.067	.071	.075	.078
13000.	.033	.035	.038	.041	.044	.047	.051	.055	.059	.062	.065	.068	.074
14000.	.031	.033	.035	.038	.041	.044	.048	.052	.055	.058	.061	.065	.074
15000.	.029	.031	.033	.035	.038	.041	.045	.048	.052	.054	.057	.061	.065
16000.	.027	.029	.031	.033	.036	.038	.042	.046	.048	.051	.054	.057	.061
17000.	.025	.027	.029	.031	.034	.037	.040	.044	.046	.049	.051	.054	.058
18000.	.023	.025	.028	.030	.032	.035	.038	.041	.043	.046	.049	.051	.054
19000.	.025	.028	.029	.030	.033	.036	.039	.041	.043	.046	.049	.052	.055

TABLE 28 GUST SENSITIVITY OF T-41

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: T-41

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	105.	110.	115.	120.	125.	130.
1500.	.047	.050	.052	.054	.057	.059	.062
2000.	.039	.041	.043	.045	.047	.049	.051
2500.	.033	.035	.036	.038	.040	.041	.043

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	105.	110.	115.	120.	125.	130.
1500.	.052	.055	.057	.060	.063	.065	.068
2000.	.042	.044	.046	.049	.051	.053	.055
2500.	.035	.037	.039	.041	.042	.044	.046

TABLE 29 GUST SENSITIVITY OF O-2

## GUST SENSITIVITY (G'S/FT/SEC GUST)

AIRCRAFT TYPE: O2

ALTITUDE: 0. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	112.	124.	136.	148.	160.
3000.	.032	.036	.040	.044	.048	.052
3500.		.032	.036	.039	.042	.046
4000.		.029	.032	.035	.038	.041
4500.			.029	.032	.035	.038
5000.			.027	.029	.032	.035

ALTITUDE: 10000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	112.	124.	136.	148.	160.
3000.	.034	.039	.043	.047	.051	.055
3500.		.034	.038	.042	.045	.049
4000.		.031	.034	.037	.041	.044
4500.			.031	.034	.037	.040
5000.			.028	.031	.034	.036

ALTITUDE: 20000. FEET

CALIBRATED AIRSPEED (KNOTS CAS)

WEIGHT	100.	112.	124.	136.	148.	160.
3000.	.037	.041	.046	.050	.055	.059
3500.		.036	.040	.044	.048	.052
4000.		.032	.036	.039	.043	.046
4500.			.032	.035	.039	.042
5000.			.029	.032	.035	.038

TABLE 30  
GUST SENSITIVITY OF OV-10

GUST SENSITIVITY (G/S/FT/SEC GUST)

AIRCRAFT TYPE: OV-10

WEIGHT	ALTITUDE: 0. FEET													
	CALIBRATED AIRSPEED (KNOTS CAS)													
	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.	245.	250.
7000.	.033	.033	.033	.033	.041	.042	.043	.043	.043	.043	.043	.043	.043	.043
8000.	.029	.031	.033	.035	.037	.038	.041	.043	.044	.045	.047	.048	.048	.050
9000.	.027	.028	.030	.032	.034	.036	.038	.038	.040	.041	.042	.043	.044	.045
10000.	.024	.026	.028	.029	.031	.033	.034	.036	.037	.038	.039	.040	.040	.041
11000.	.022	.024	.025	.027	.028	.030	.032	.033	.034	.035	.036	.037	.037	.038
12000.		.022	.024	.025	.027	.028	.029	.031	.032	.032	.033	.034	.035	.035
13000.			.022	.023	.025	.026	.027	.028	.030	.030	.031	.032	.032	.033
14000.				.021	.022	.023	.024	.025	.027	.028	.028	.029	.030	.031
15000.					.021	.022	.023	.024	.025	.026	.027	.027	.028	.029
WEIGHT	ALTITUDE: 10000. FEET													
	CALIBRATED AIRSPEED (KNOTS CAS)													
	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.	245.	250.
7000.	.035	.037	.038	.042	.044	.047	.048	.051	.053	.054	.055	.057	.058	.058
8000.	.031	.033	.035	.037	.038	.042	.044	.046	.047	.048	.049	.051	.052	.053
9000.	.028	.030	.032	.034	.036	.038	.040	.042	.043	.044	.045	.046	.047	.048
10000.	.025	.027	.028	.031	.033	.034	.036	.038	.039	.040	.041	.042	.043	.044
11000.	.023	.025	.027	.028	.030	.032	.033	.035	.036	.037	.038	.038	.039	.040
12000.		.023	.025	.026	.028	.029	.031	.032	.033	.034	.035	.036	.036	.037
13000.			.023	.024	.026	.027	.028	.030	.031	.032	.032	.033	.034	.035
14000.				.021	.023	.024	.025	.027	.028	.029	.030	.031	.032	.032
15000.					.021	.023	.024	.025	.026	.027	.028	.029	.030	.030
WEIGHT	ALTITUDE: 20000. FEET													
	CALIBRATED AIRSPEED (KNOTS CAS)													
	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.	245.	250.
7000.	.048	.048	.049	.049	.049	.049	.052	.053	.053	.053	.053	.053	.053	.053
8000.	.032	.035	.037	.038	.042	.044	.046	.048	.049	.050	.051	.053	.054	.057
9000.	.029	.031	.033	.035	.037	.040	.042	.044	.045	.046	.047	.048	.050	.051
10000.	.026	.028	.030	.032	.034	.036	.038	.040	.041	.042	.043	.044	.045	.046
11000.		.026	.028	.029	.031	.033	.035	.037	.038	.038	.040	.041	.042	.043
12000.			.024	.026	.027	.028	.030	.032	.034	.035	.036	.037	.037	.038
13000.				.024	.025	.027	.028	.030	.031	.032	.033	.034	.035	.036
14000.					.024	.025	.026	.028	.028	.030	.031	.032	.033	.034
15000.						.022	.023	.025	.026	.028	.028	.030	.030	.031
WEIGHT	ALTITUDE: 30000. FEET													
	CALIBRATED AIRSPEED (KNOTS CAS)													
	150.	160.	170.	180.	190.	200.	210.	220.	225.	230.	235.	240.	245.	250.
7000.	.038	.041	.044	.047	.049	.051	.053	.055	.056	.057	.058	.058	.058	.059
8000.	.034	.036	.038	.041	.044	.047	.049	.052	.054	.055	.057	.058	.059	.062
9000.	.030	.032	.035	.037	.039	.042	.044	.047	.048	.050	.051	.053	.054	.056
10000.	.027	.029	.031	.034	.036	.038	.040	.043	.044	.045	.046	.048	.049	.051
11000.		.027	.029	.031	.033	.035	.037	.039	.040	.041	.042	.044	.045	.046
12000.			.025	.027	.028	.030	.032	.034	.035	.036	.038	.039	.040	.042
13000.				.025	.026	.028	.030	.031	.033	.034	.035	.036	.037	.038
14000.					.024	.026	.028	.029	.031	.032	.033	.034	.035	.036
15000.						.023	.024	.026	.028	.029	.030	.031	.032	.033

TABLE 31  
GUST SENSITIVITY OF U-2

GUST SENSITIVITY (G/RYD/SEC GUST)

AIRCRAFT TYPE: U-2

HEIGHT	ALTITUDE: 0, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.012	.036	.038	.042	.044	.046	.047	.048	.051	.052	.054	.056	.057	.058	.059	.060
18000.	.030	.033	.036	.038	.041	.042	.044	.046	.047	.048	.050	.052	.053	.055	.056	.058
20000.	.028	.031	.034	.037	.038	.040	.041	.043	.044	.045	.047	.049	.050	.051	.052	.054
22000.	.027	.028	.032	.035	.036	.037	.038	.040	.042	.043	.044	.046	.047	.048	.049	.050
24000.	.025	.028	.030	.033	.034	.035	.037	.038	.039	.040	.042	.043	.044	.045	.046	.047
26000.	.024	.026	.028	.031	.032	.033	.035	.036	.037	.038	.040	.041	.042	.043	.044	.045
28000.	.023	.025	.027	.029	.031	.032	.033	.034	.035	.036	.038	.039	.040	.041	.042	.043
30000.	.022	.024	.026	.028	.029	.030	.032	.033	.034	.035	.036	.037	.038	.039	.040	.041
32000.	.021	.023	.025	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.039
34000.	.020	.022	.024	.026	.027	.028	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038
HEIGHT	ALTITUDE: 10000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.016	.040	.044	.048	.049	.051	.053	.054	.057	.058	.061	.063	.065	.066	.068	.070
18000.	.034	.037	.041	.044	.046	.047	.048	.051	.053	.054	.056	.058	.060	.061	.063	.065
20000.	.031	.035	.038	.041	.043	.044	.046	.047	.048	.051	.052	.054	.056	.057	.059	.061
22000.	.028	.032	.035	.038	.040	.041	.043	.044	.046	.047	.048	.050	.052	.053	.055	.057
24000.	.028	.030	.033	.036	.037	.038	.040	.042	.043	.044	.046	.047	.049	.050	.052	.054
26000.	.026	.029	.031	.034	.035	.036	.038	.039	.040	.042	.043	.045	.046	.048	.049	.051
28000.	.024	.027	.029	.032	.033	.034	.035	.037	.038	.040	.041	.042	.044	.045	.047	.048
30000.	.023	.025	.028	.030	.031	.032	.034	.035	.036	.037	.039	.040	.041	.043	.044	.046
32000.	.022	.024	.027	.029	.030	.031	.032	.033	.034	.035	.037	.038	.039	.041	.042	.044
34000.	.021	.023	.025	.027	.028	.030	.031	.032	.033	.034	.035	.036	.037	.039	.040	.041
HEIGHT	ALTITUDE: 20000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.040	.045	.048	.053	.055	.057	.058	.060	.063	.065	.068	.070	.072	.074	.076	.078
18000.	.037	.041	.045	.048	.050	.052	.054	.056	.058	.060	.062	.064	.066	.068	.070	.072
20000.	.034	.038	.041	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064	.066	.068
22000.	.032	.035	.038	.042	.043	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064
24000.	.030	.033	.036	.039	.040	.042	.043	.045	.047	.048	.050	.052	.054	.056	.058	.060
26000.	.028	.031	.034	.037	.038	.039	.041	.042	.044	.045	.047	.048	.050	.052	.054	.056
28000.	.026	.029	.032	.034	.035	.037	.038	.040	.041	.043	.044	.046	.047	.049	.050	.052
30000.	.025	.027	.030	.032	.033	.034	.035	.036	.038	.039	.040	.042	.043	.044	.046	.047
32000.	.023	.026	.028	.031	.032	.033	.034	.035	.036	.037	.038	.040	.041	.042	.044	.045
34000.	.022	.025	.027	.029	.030	.031	.032	.033	.034	.035	.036	.037	.038	.040	.041	.042
HEIGHT	ALTITUDE: 30000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.044	.048	.053	.058	.060	.062	.063	.065	.068	.070	.072	.074	.076	.078	.080	.082
18000.	.040	.044	.048	.053	.055	.057	.058	.060	.063	.065	.068	.071	.073	.075	.077	.079
20000.	.037	.041	.045	.049	.050	.052	.054	.057	.058	.061	.063	.065	.067	.069	.071	.073
22000.	.034	.038	.041	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064	.066	.068
24000.	.032	.035	.038	.042	.043	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064
26000.	.030	.033	.036	.039	.041	.042	.044	.045	.047	.048	.050	.052	.054	.056	.058	.060
28000.	.028	.031	.034	.037	.038	.039	.041	.042	.044	.045	.047	.048	.050	.052	.054	.056
30000.	.026	.029	.032	.034	.035	.037	.038	.040	.041	.043	.044	.046	.047	.049	.050	.052
32000.	.025	.027	.030	.032	.033	.034	.035	.037	.038	.039	.041	.042	.044	.045	.047	.048
34000.	.024	.026	.028	.031	.032	.033	.034	.035	.036	.037	.038	.040	.041	.042	.044	.045
HEIGHT	ALTITUDE: 40000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.048	.053	.058	.064	.066	.068	.070	.072	.074	.076	.078	.081	.084	.086	.088	.091
18000.	.043	.048	.053	.058	.060	.062	.063	.065	.068	.071	.074	.076	.078	.081	.083	.086
20000.	.040	.044	.048	.053	.055	.057	.058	.060	.063	.065	.067	.070	.073	.075	.077	.080
22000.	.036	.040	.044	.049	.051	.053	.055	.057	.058	.061	.064	.067	.069	.072	.074	.077
24000.	.034	.037	.041	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064	.066	.068
26000.	.031	.035	.038	.042	.044	.045	.047	.048	.050	.052	.054	.056	.058	.060	.062	.064
28000.	.028	.033	.036	.039	.041	.043	.044	.046	.048	.050	.052	.054	.056	.058	.060	.062
30000.	.026	.031	.034	.037	.038	.040	.042	.043	.045	.047	.048	.051	.053	.055	.057	.059
32000.	.025	.028	.032	.035	.036	.038	.039	.041	.043	.044	.046	.048	.050	.052	.054	.056
34000.	.024	.027	.030	.033	.034	.036	.037	.039	.040	.042	.044	.045	.047	.049	.051	.053
HEIGHT	ALTITUDE: 50000, FEET CALIBRATED AIRSPEED (KNOTS CAS)															
	100.	110.	120.	130.	140.	145.	150.	155.	160.	165.	170.	175.	180.	185.	190.	195.
16000.	.052	.058	.064	.071	.074	.076	.078	.080	.083	.086	.089	.092	.095	.098	.101	.104
18000.	.047	.052	.058	.064	.067	.070	.074	.077	.081	.083	.086	.089	.092	.095	.098	.101
20000.	.042	.047	.052	.058	.061	.064	.067	.070	.074	.076	.078	.082	.085	.088	.091	.094
22000.	.039	.043	.048	.053	.056	.058	.061	.065	.068	.071	.073	.076	.079	.082	.085	.088
24000.	.036	.040	.044	.048	.051	.054	.057	.060	.063	.066	.068	.071	.074	.077	.080	.083
26000.	.033	.037	.041	.045	.048	.050	.053	.056	.058	.061	.064	.067	.070	.073	.076	.079
28000.	.031	.035	.038	.042	.045	.047	.049	.052	.054	.057	.060	.063	.066	.069	.072	.075
30000.	.028	.032	.035	.039	.042	.044	.046	.049	.051	.054	.057	.060	.063	.066	.069	.072
32000.	.027	.030	.033	.037	.039	.041	.043	.046	.048	.051	.054	.057	.060	.063	.066	.069
34000.	.026	.029	.032	.036	.038	.040	.042	.045	.047	.050	.053	.056	.059	.062	.065	.068

## SECTION V

### CONCLUSIONS AND RECOMMENDATIONS

For most aircraft, the method used in this report for calculating gust sensitivity should provide sufficient accuracy for the application intended by Air Weather Service. However, the values of gust sensitivity have not been verified on an aircraft basis and therefore a certain amount of caution is in order. Also, the following should be considered:

1. Gust sensitivity of an aircraft is only one of the major considerations for flight through turbulence. The amount of time spent in turbulence and its effect on pilot fatigue should also be considered. The controllability of an aircraft is decreased by turbulence which in turn contributes to pilot fatigue. Certification of aircraft assures "satisfactory" controllability in turbulence, but an outlook for marginal conditions should be maintained. This report does not provide any information regarding the controllability of aircraft in turbulence.
2. For some sophisticated aircraft, the flight control system provides stability that is not inherent in the aircraft configuration. It is probable that these aircraft, and other aircraft of unusual configuration, will require more sophisticated analysis techniques to yield reasonable values of gust sensitivity. It is requested that if the gust sensitivity of particular aircraft seem unreasonable, either through observation of aircraft response or through the existence of more sophisticated analysis, that this be reported to the author.
3. The range of airspeed, gross weight, and altitude presented in the tables and graphs are intended to cover the normal range of operation of each aircraft. It is possible that the normal range may have been exceeded for some aircraft and underestimated for other aircraft, particularly fighter type aircraft. Hence, parameters in the tables should not be used as an indication of the flight envelope for any aircraft.



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4. It is anticipated the Air Weather Service will determine the utility of the approach presented in this report by implementing procedures based on the given values of gust sensitivity. It is requested that any suggestions for improvement that may become apparent be relayed to the author. It is possible that a need may be identified to utilize a more sophisticated procedure for calculating gust sensitivity, at least for some aircraft.

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2. General Dynamics/Convair Aerospace Division, Aerospace Handbook, FZA-381-II, Rev. B, March 1976.
3. Turner, E. W., An Exposition on Aircraft Response to Atmospheric Turbulence Using Power Spectral Density Analysis Techniques, AFFDL-TR-76-162, Air Force Flight Dynamics Laboratory, Wright-Patterson Air Force Base, Ohio 45433, May 1977.

APPENDIX A

LIFT CURVE SLOPE VS MACH NUMBER  
FROM EMPIRICAL EQUATION  
FOR VARIOUS AIRCRAFT

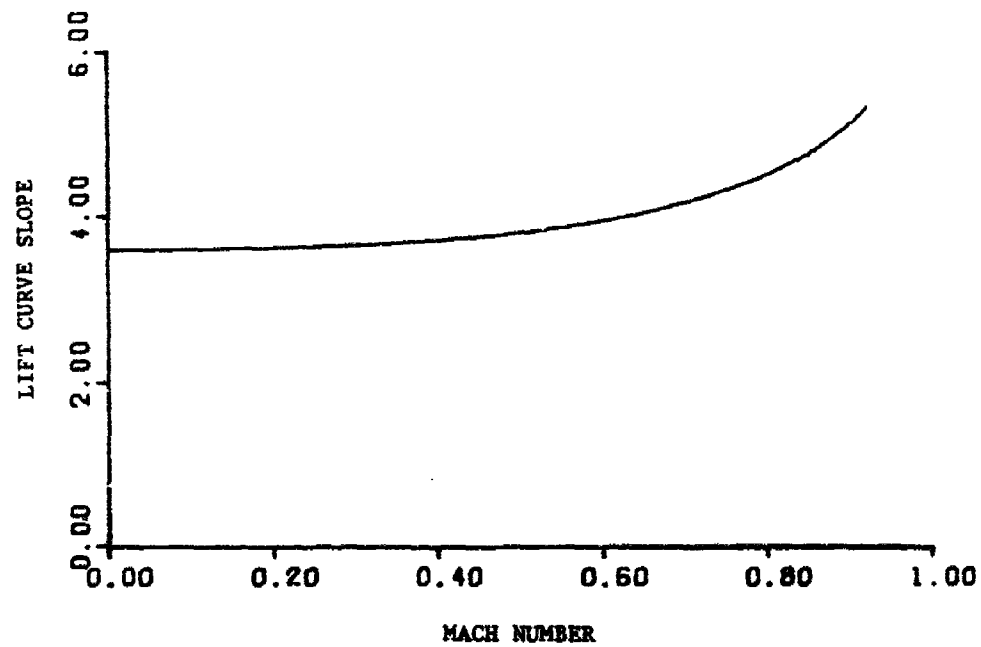


Figure 8. A-7 Lift Curve Slope Vs Mach Number from Empirical Equation

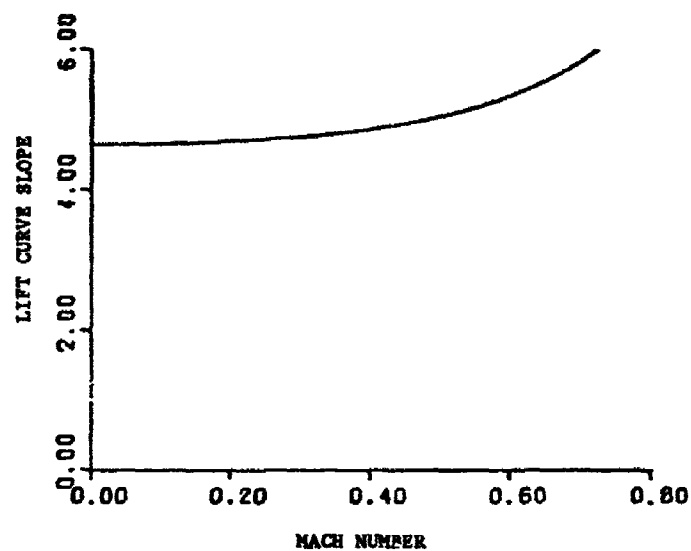


Figure 9. A-10 Lift Curve Slope Vs Mach Number from Empirical Equation

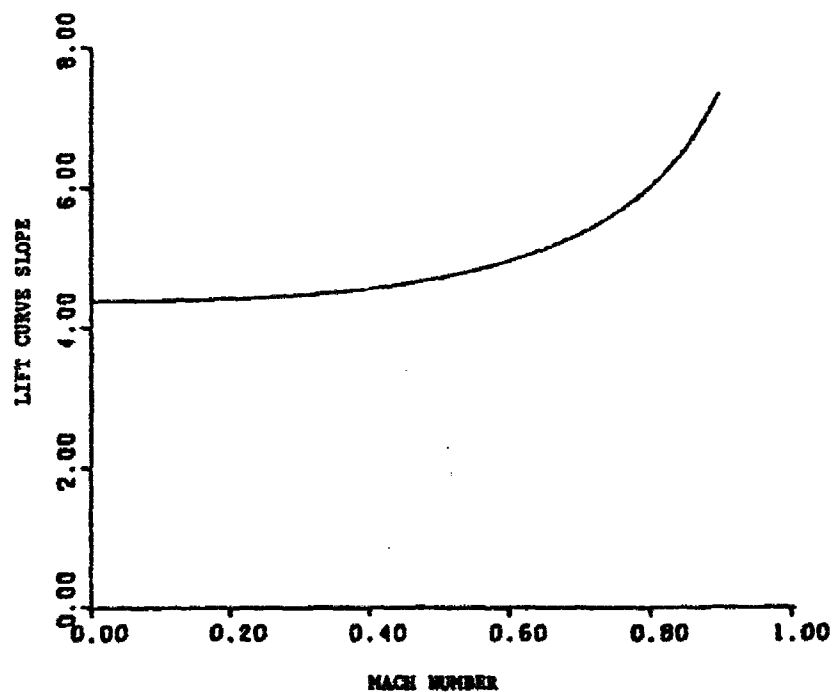


Figure 10. B-52 Lift Curve Slope Vs Mach Number from Empirical Equation

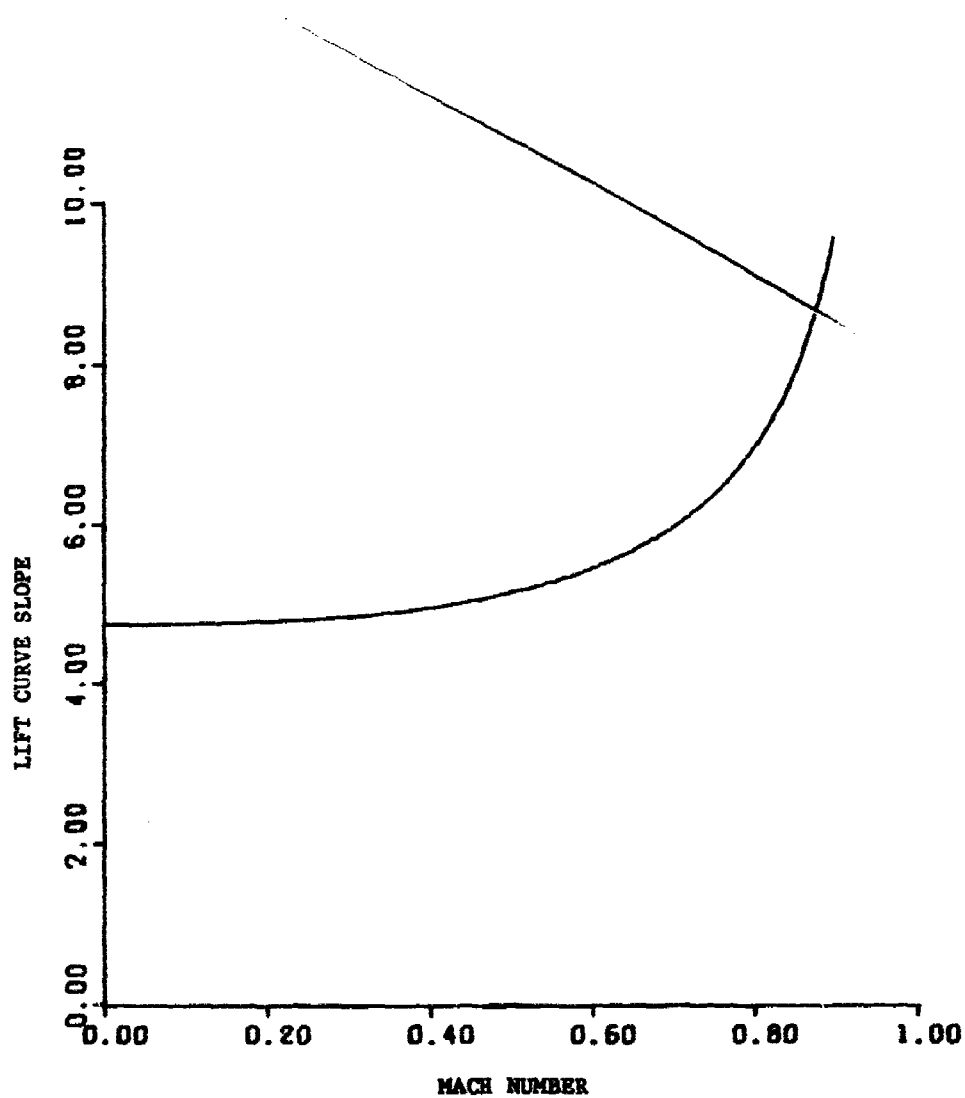


Figure 11. BAC 1-11 (200) Lift Curve Slope Vs Mach Number from Empirical Equation

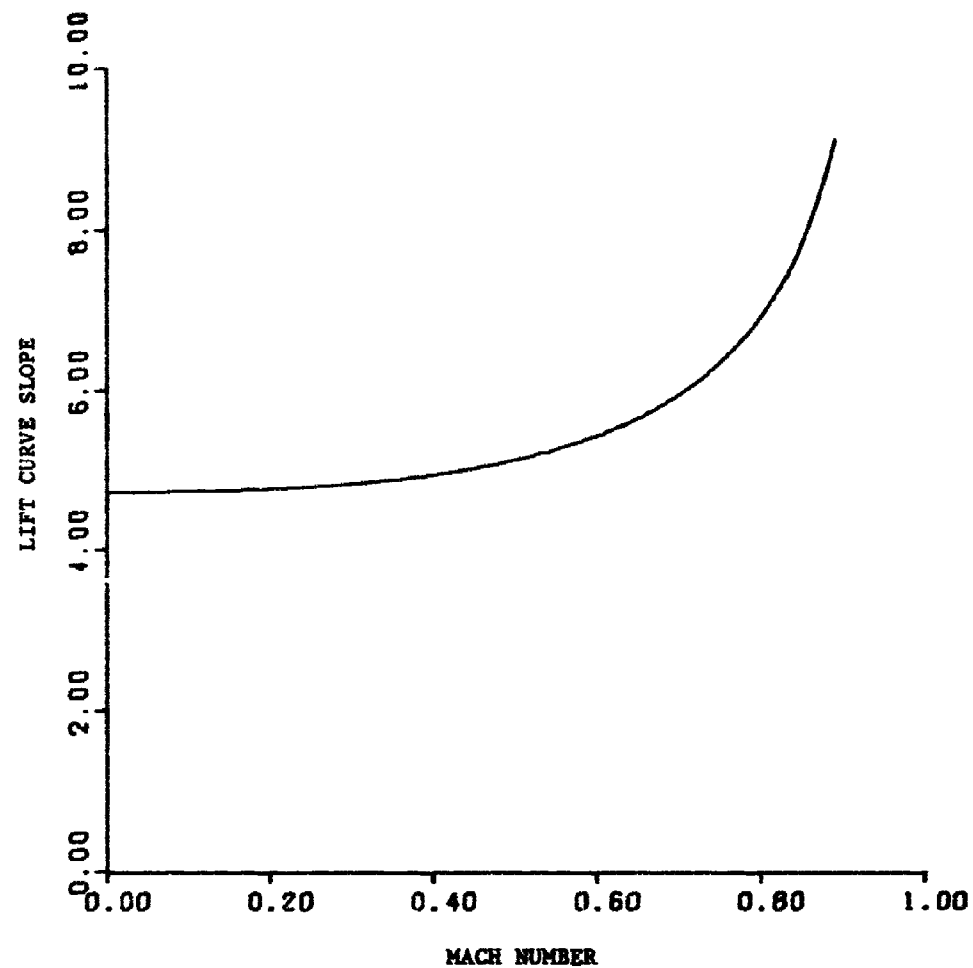


Figure 12. BAC 1-11 (400) Lift Curve Slope Vs Mach Number from Empirical Equation

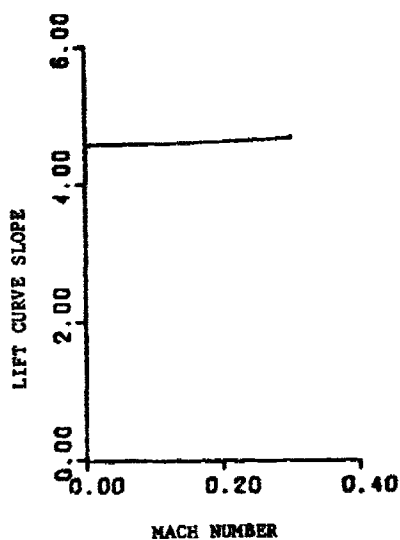


Figure 13. Beech V35B Lift Curve Slope vs. Mach Number From Empirical Equation

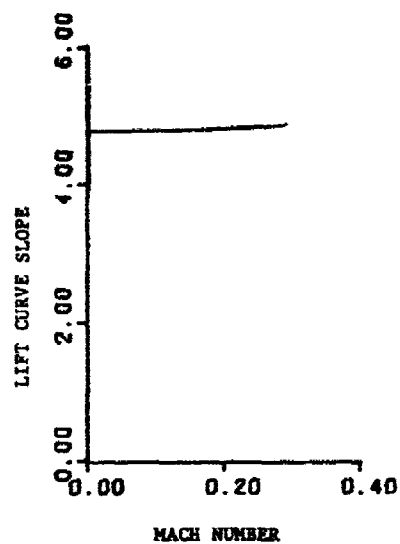


Figure 14. Beech E55 Lift Curve Slope vs. Mach Number From Empirical Equation

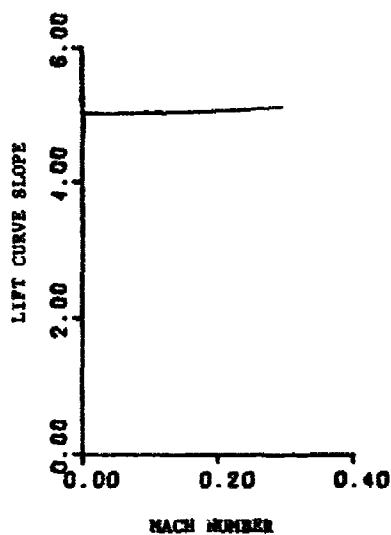


Figure 15. Beech E90 Lift Curve Slope vs. Mach Number From Empirical Equation



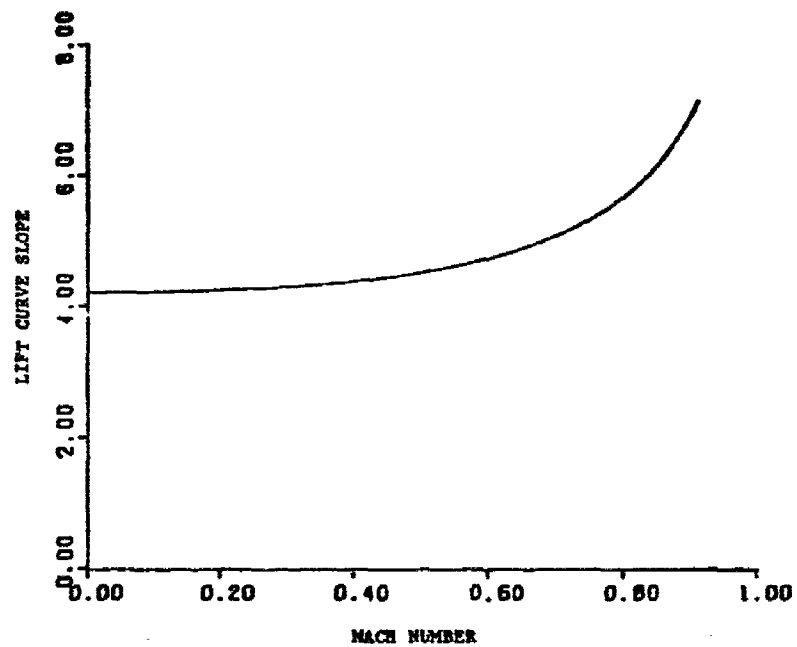


Figure 16. Boeing 707-300 Lift Curve Slope Vs Mach Number from Empirical Equation

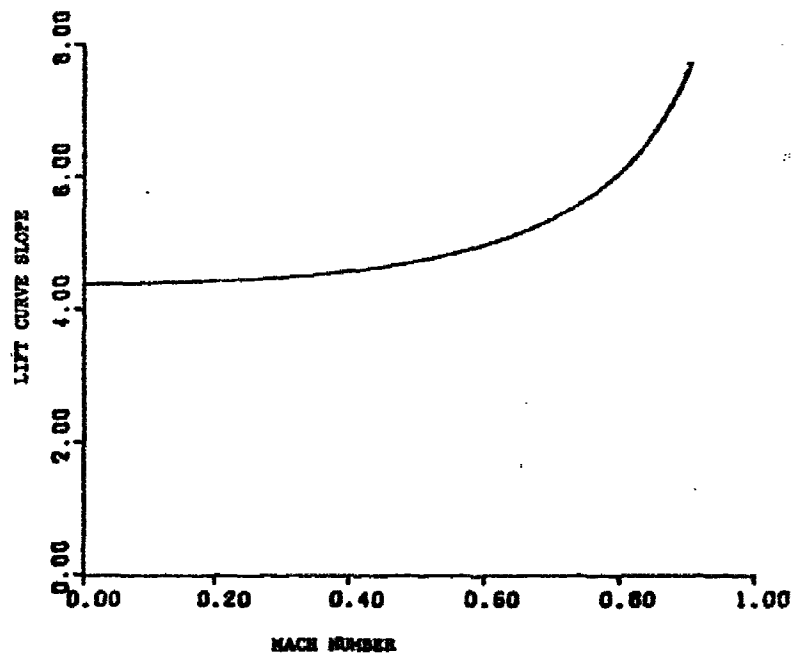


Figure 17. Boeing 727 Lift Curve Slope Vs Mach Number from Empirical Equation

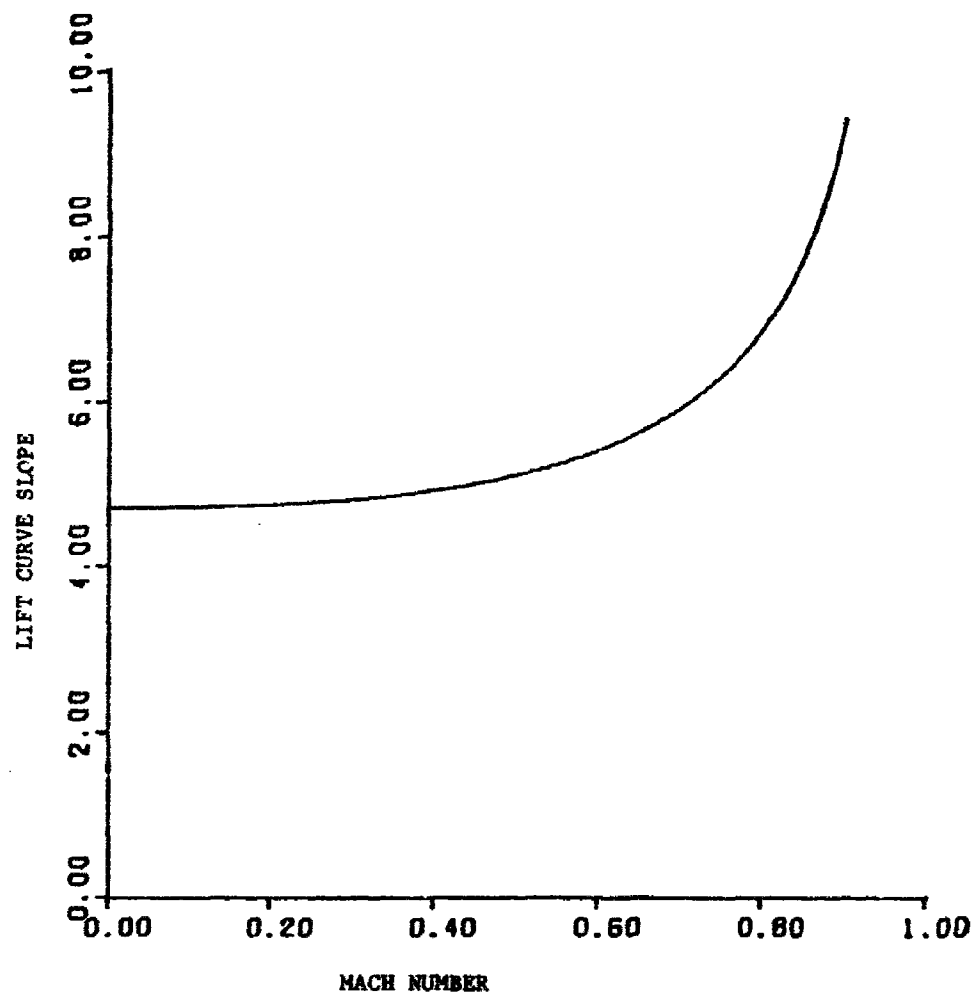


Figure 18. Boeing 737 Lift Curve Slope Vs Mach Number from Empirical Equation

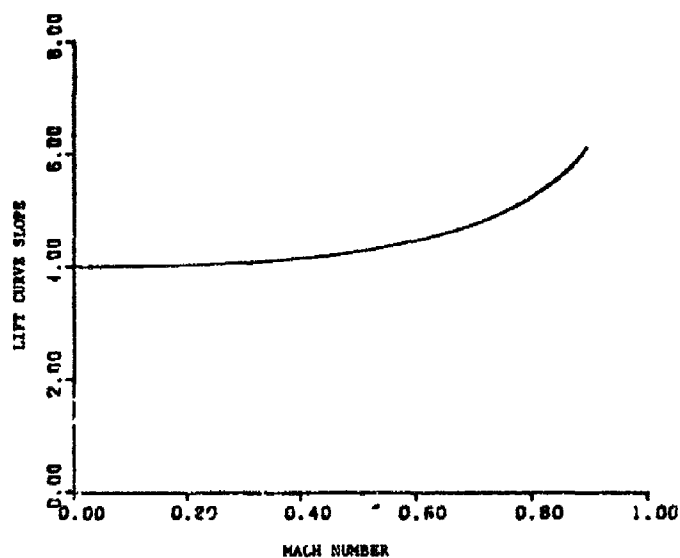


Figure 19. Boeing 747 Lift Curve Slope Vs Mach Number from Empirical Equation

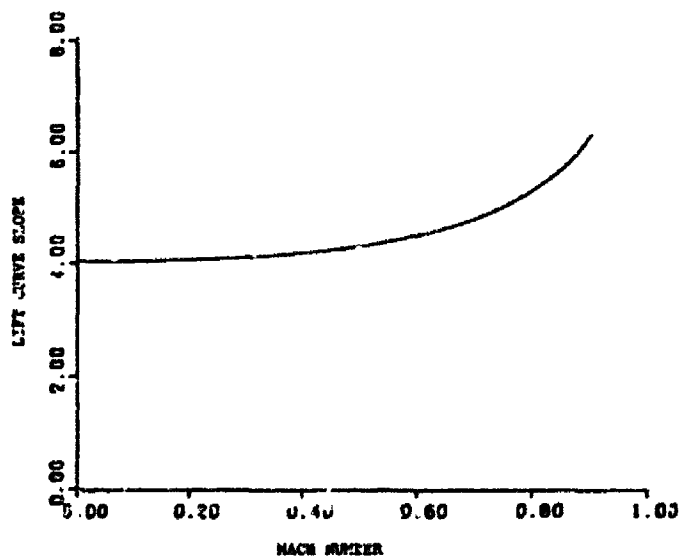


Figure 20. Boeing 747-SP Lift Curve Slope Vs Mach Number from Empirical Equation

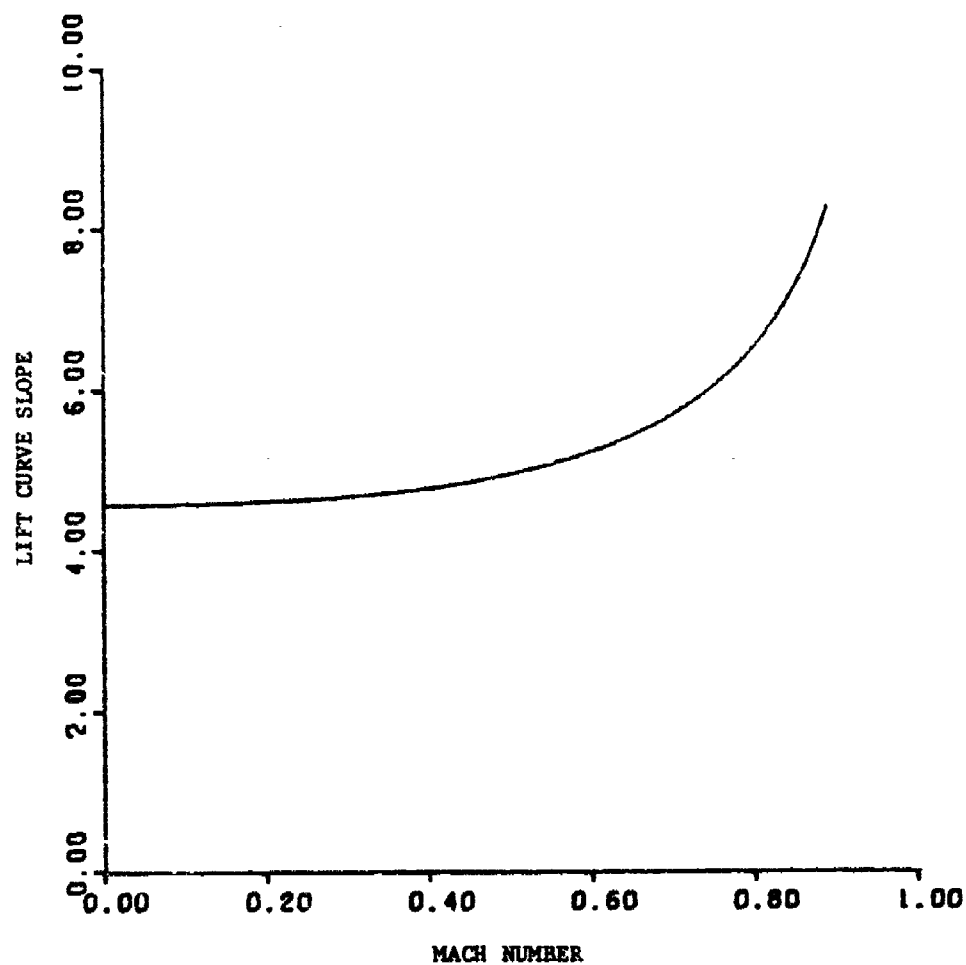


Figure 21. C-5A Lift Curve Slope Vs Mach Number from Empirical Equation

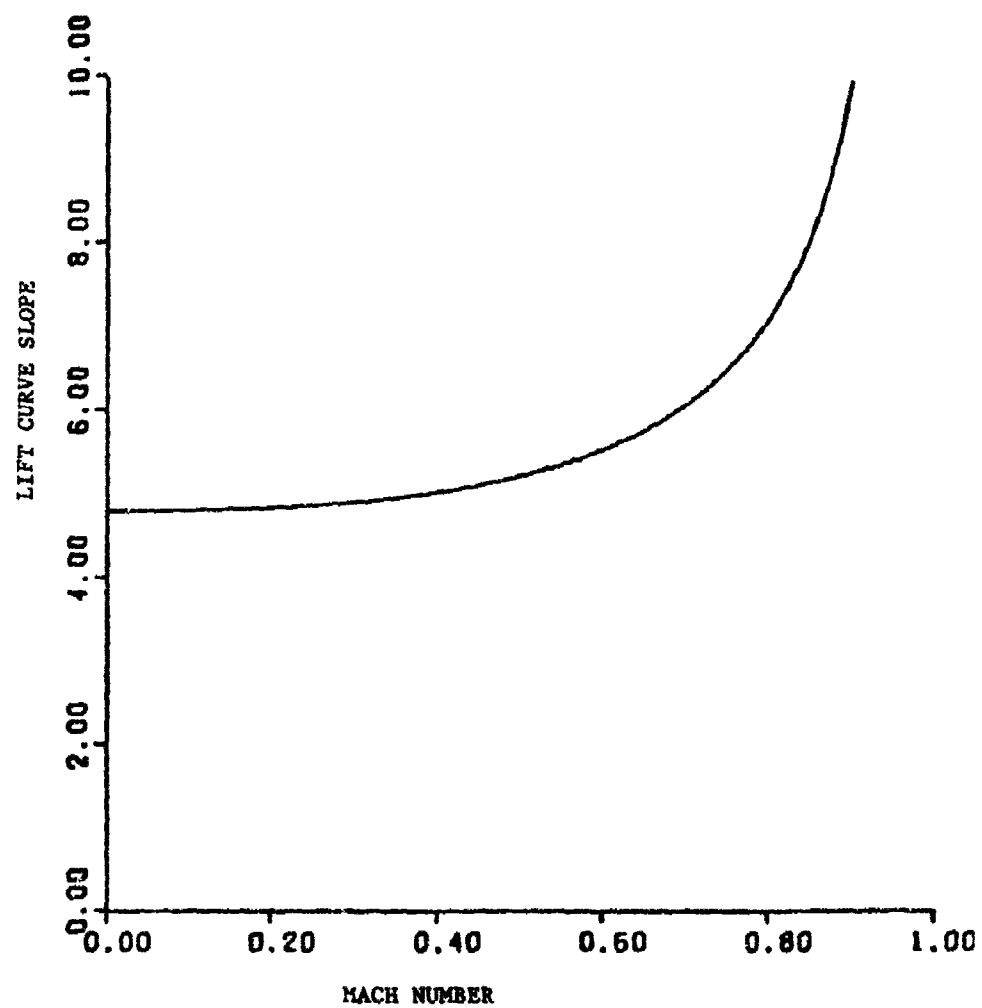


Figure 22. C-9 Lift Curve Slope Vs Mach Number from Empirical Equation

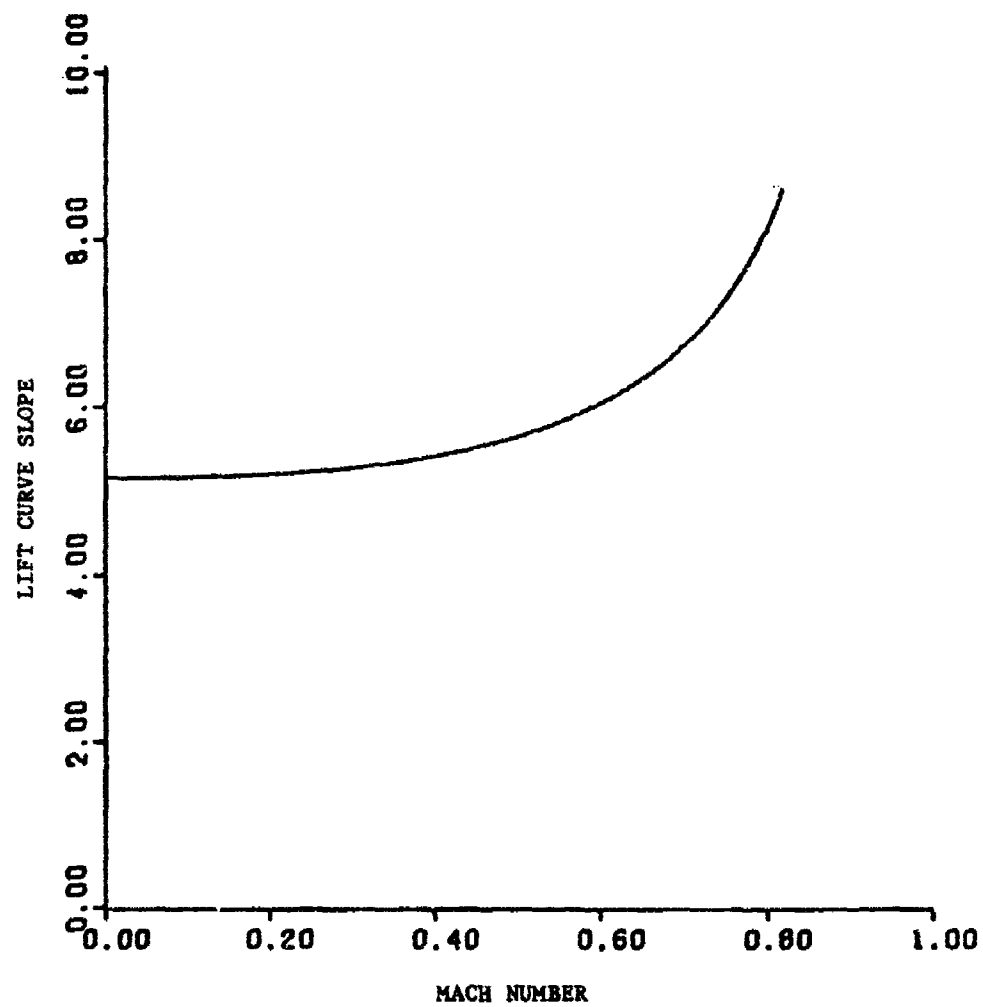


Figure 23. C-130 Lift Curve Slope Vs Mach Number from Empirical Equation

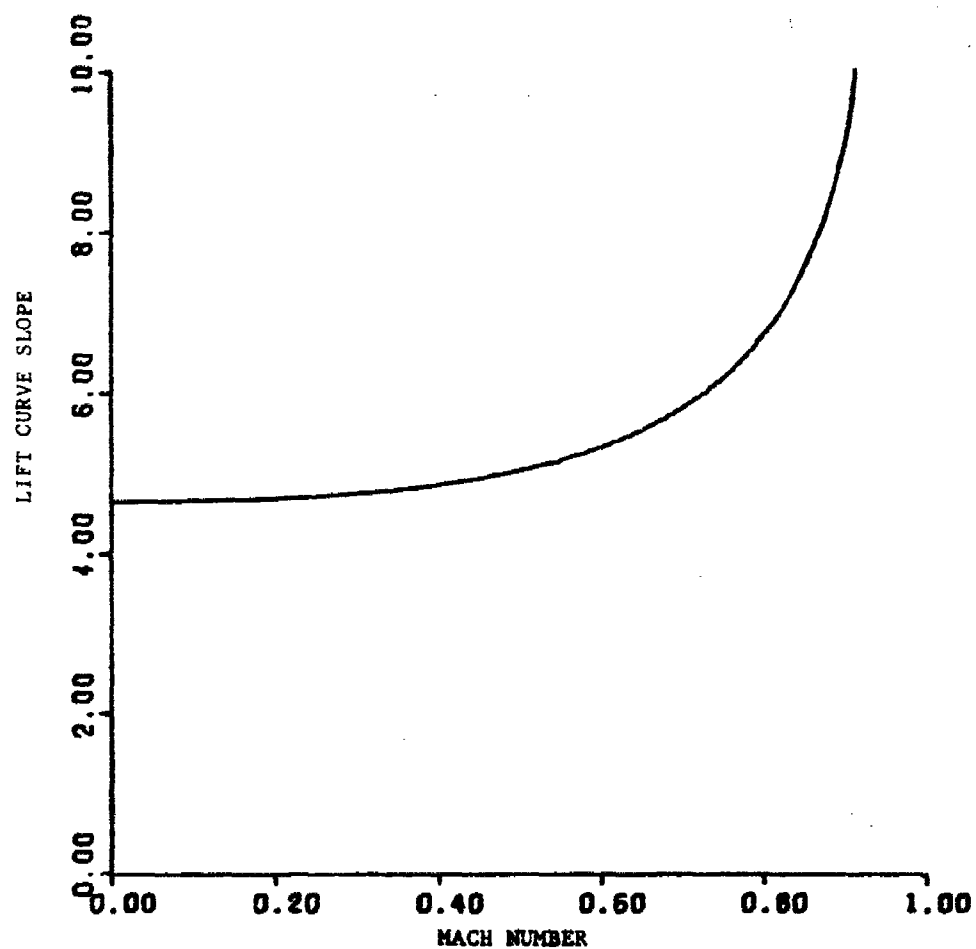


Figure 24. C-141 Lift Curve Slope Vs Mach Number from Empirical Equation

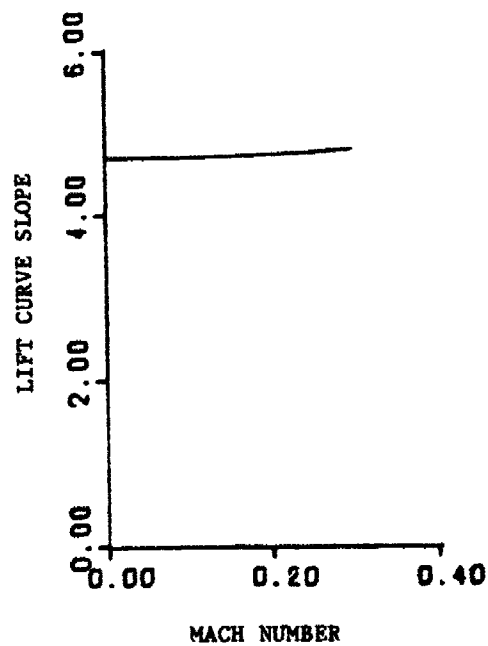


Figure 25. Cessna 150 Lift Curve Slope Vs Mach Number from Empirical Equation



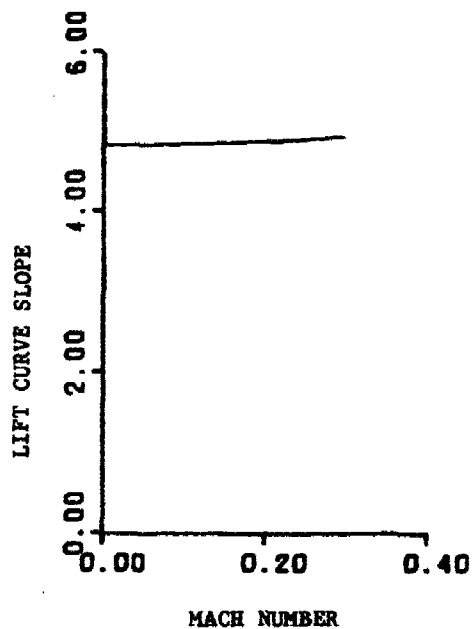


Figure 26. Cessna 172 Lift Curve Slope Vs Mach Number from Empirical Equation

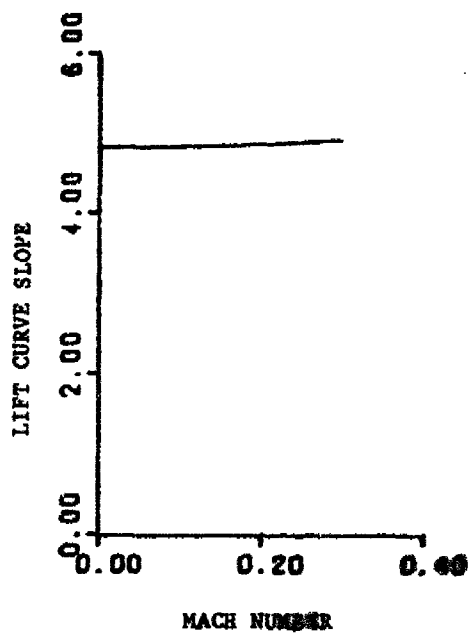


Figure 27. Cessna 175 Lift Curve Slope Vs Mach Number from Empirical Equation

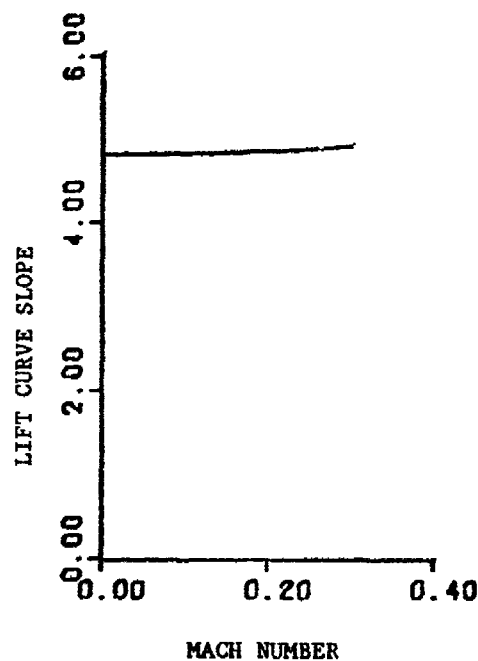


Figure 28. Cessna 180 Lift Curve Slope Vs Mach Number from Empirical Equation

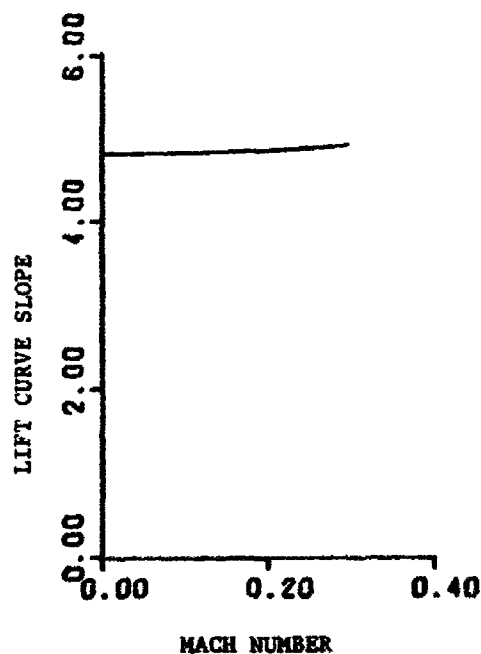


Figure 29. Cessna 182 Lift Curve Slope Vs Mach Number from Empirical Equation

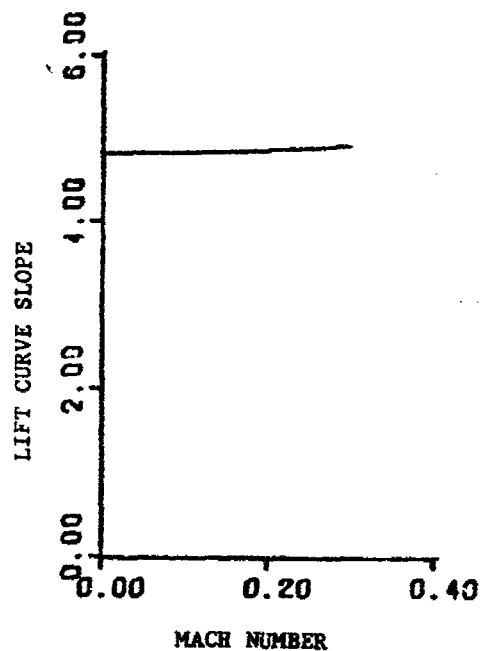


Figure 30. Cessna 205 Lift Curve Slope Vs Mach Number from Empirical Equation

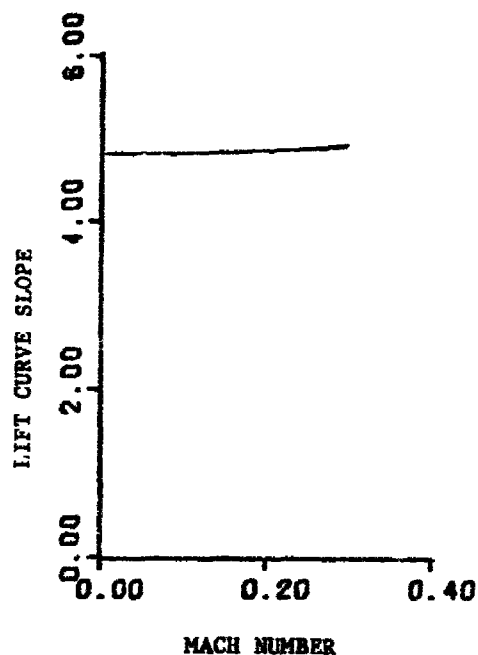


Figure 31. Cessna 210 Lift Curve Slope Vs Mach Number from Empirical Equation

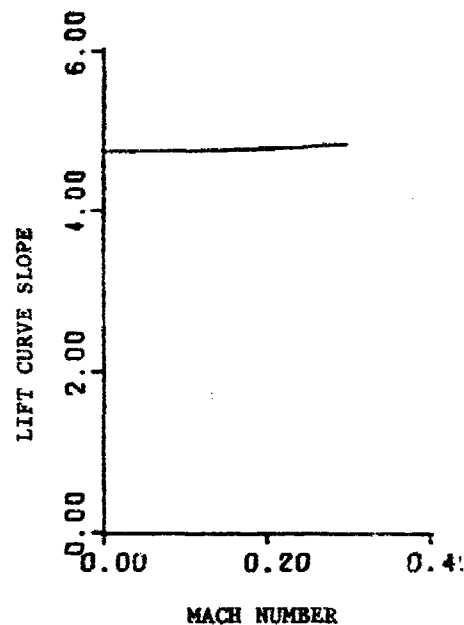


Figure 32. Cessna 310 Lift Curve Slope Vs Mach Number from Empirical Equation

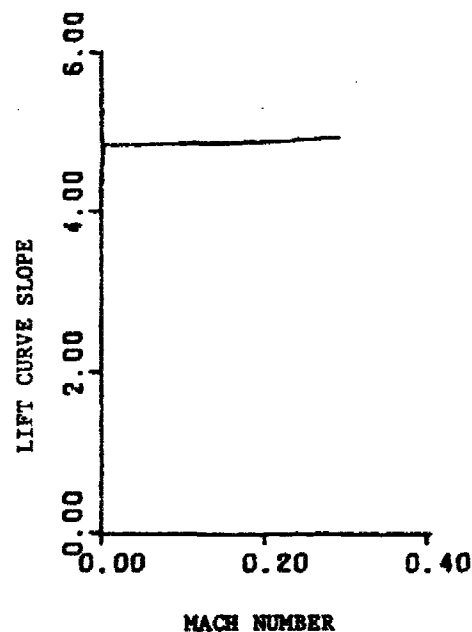


Figure 33. Cessna 401, 402 Lift Curve Slope Vs Mach Number from Empirical Equation

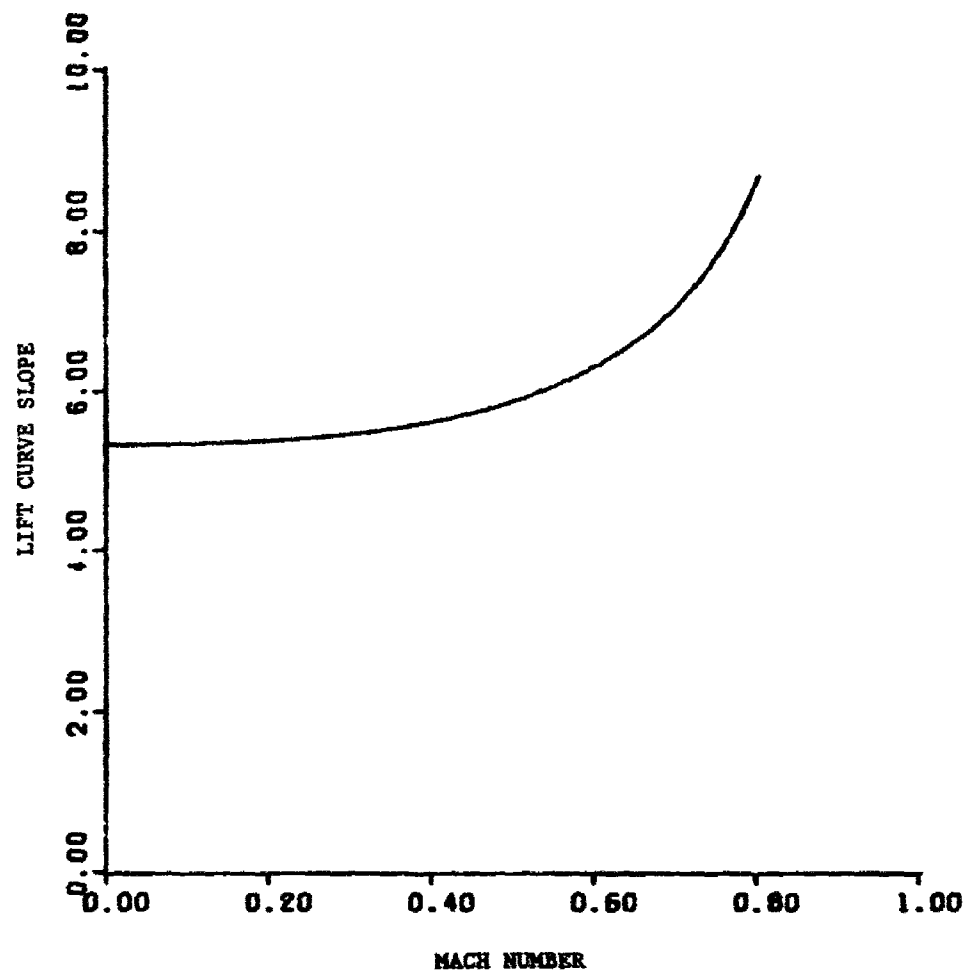


Figure 34. Convair 440, 330 Lift Curve Slope Vs Mach Number from Empirical Equation

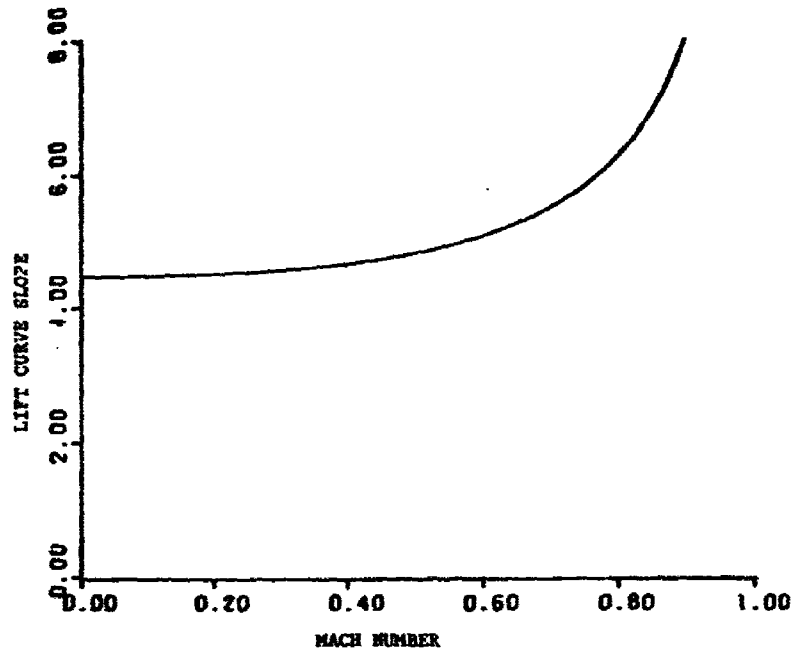


Figure 35. DC-8-50, 61 Lift Curve Slope Vs Mach Number from Empirical Equation

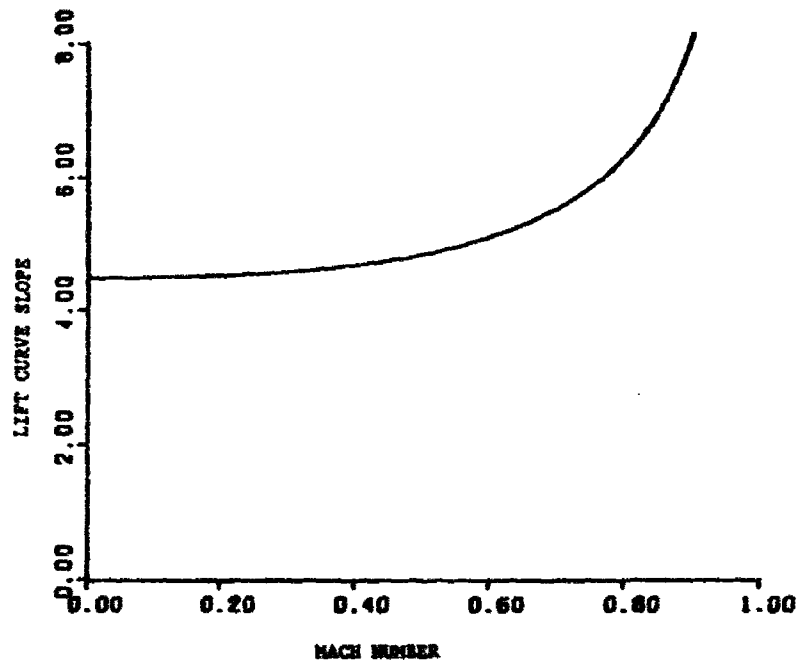


Figure 36. DC-8-62, 63 Lift Curve Slope Vs Mach Number from Empirical Equation

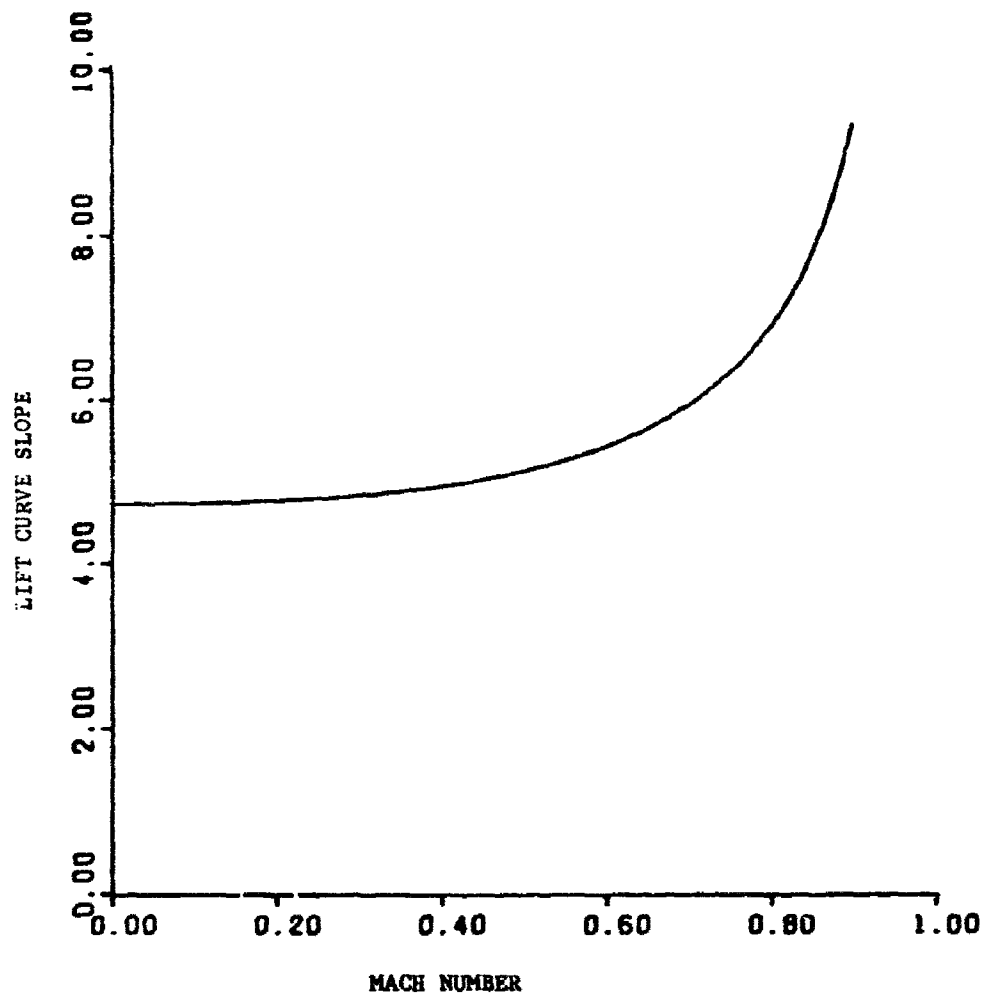


Figure 37. DC-9-10 Lift Curve Slope Vs Mach Number from Empirical Equation

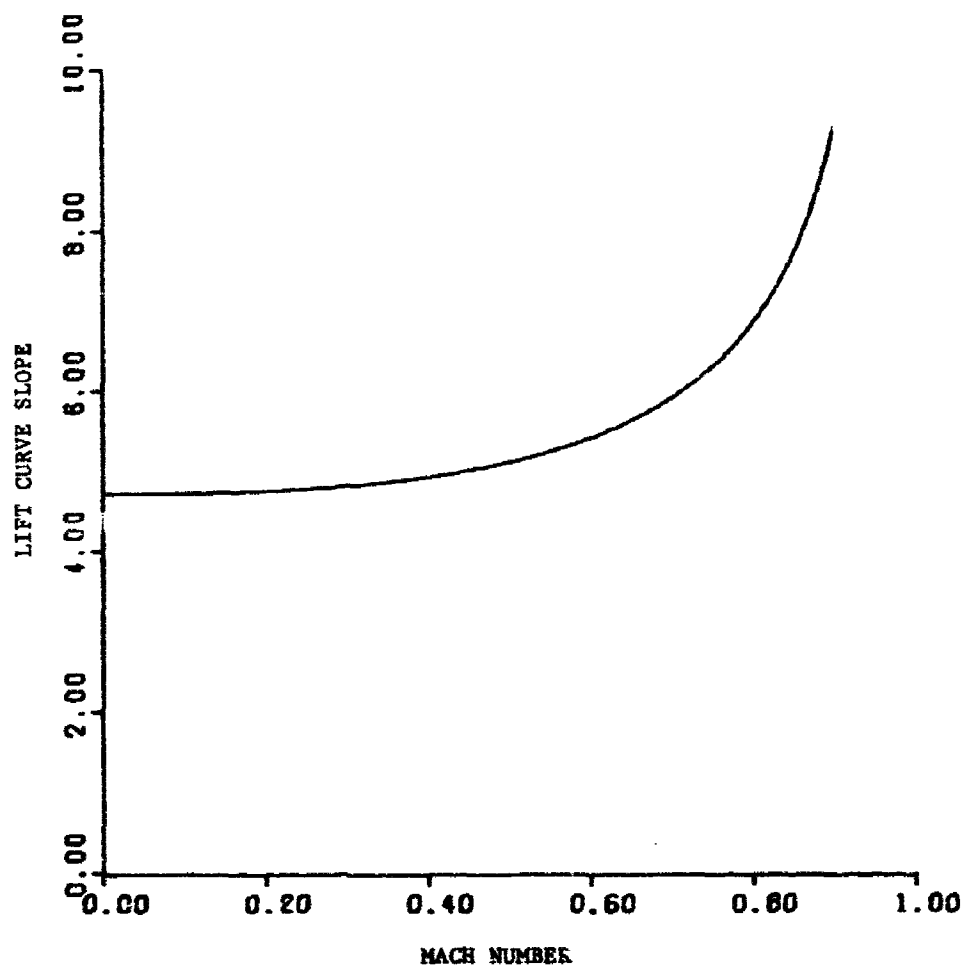


Figure 38. DC-9-30, 40, 50 Lift Curve Slope Vs Mach Number from Empirical Equation



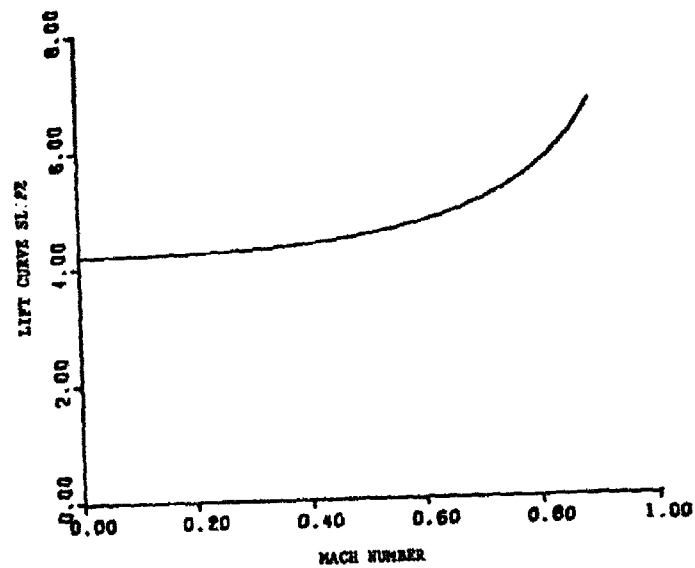


Figure 39. DC-10-10 Lift Curve Slope Vs Mach Number from Empirical Equation

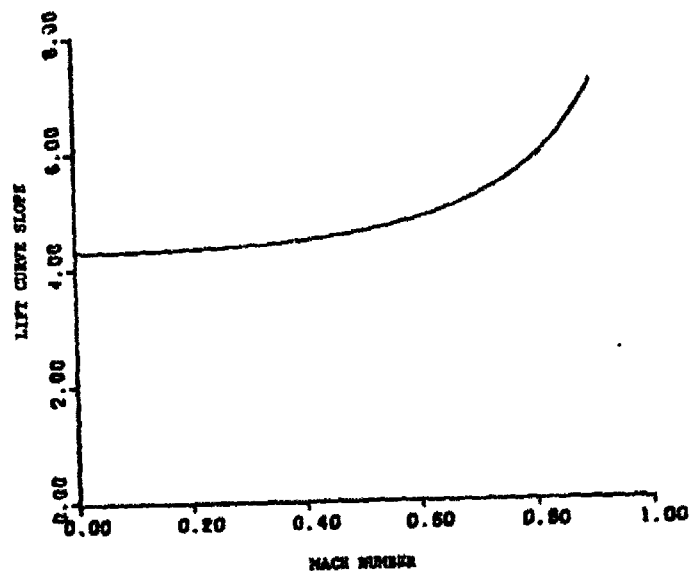


Figure 40. DC-10-20 Lift Curve Slope Vs Mach Number from Empirical Equation

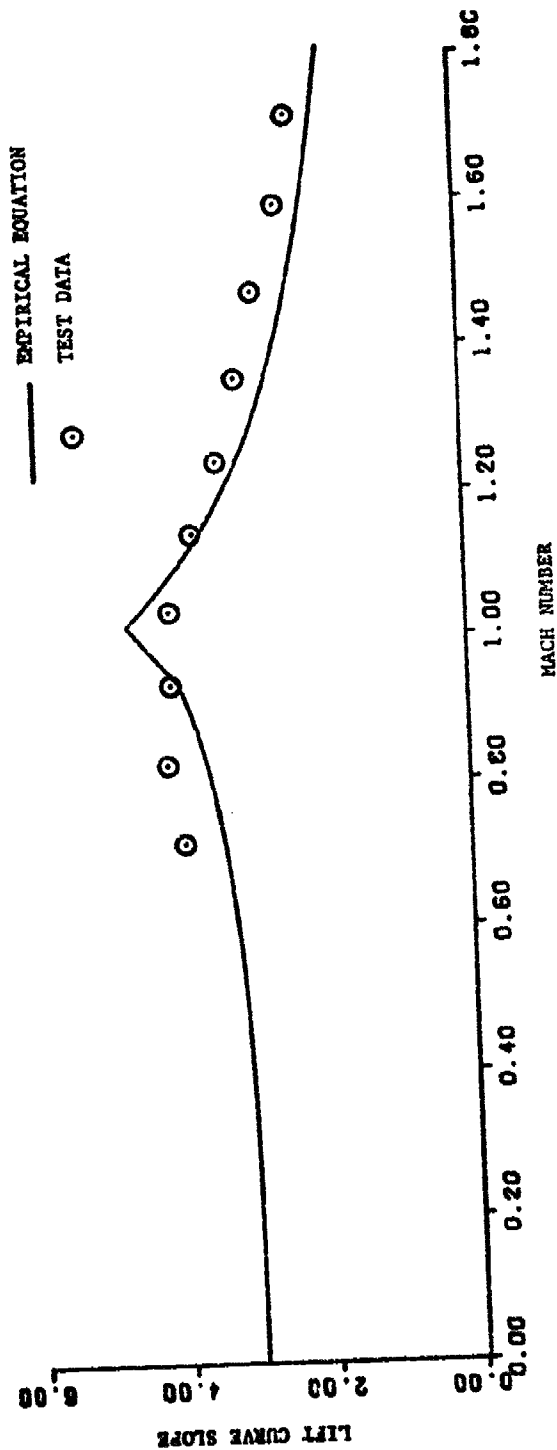


Figure 41. F-4 Lift Curve Slope Vs Mach Number from Empirical Equation Compared with Test Data

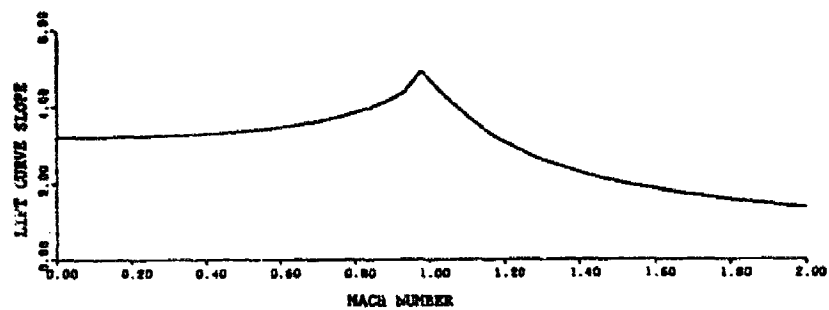


Figure 42. F-15 Lift Curve Slope Vs Mach Number from Empirical Equation

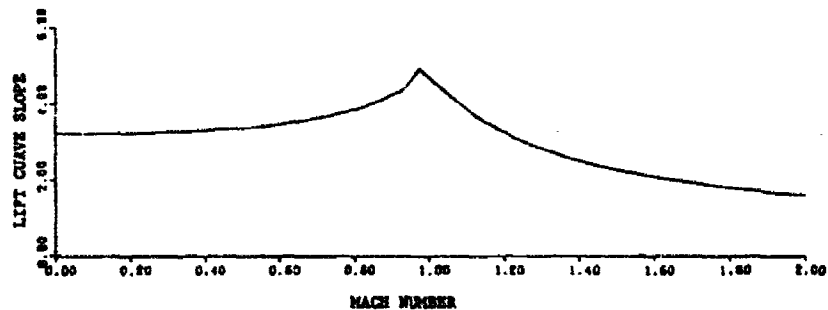


Figure 43. F-16 Lift Curve Slope Vs Mach Number from Empirical Equation

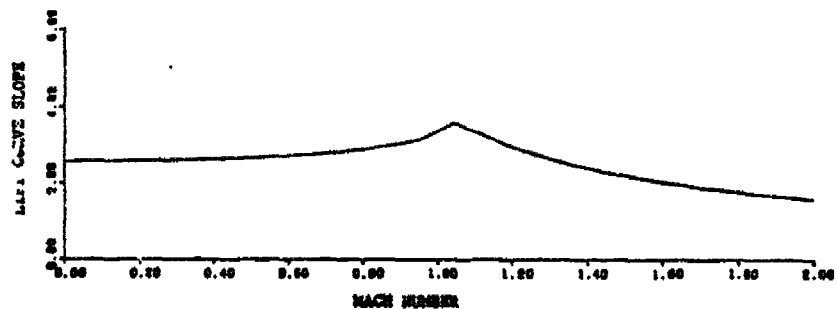


Figure 44. F-106 Lift Curve Slope Vs Mach Number from Empirical Equation

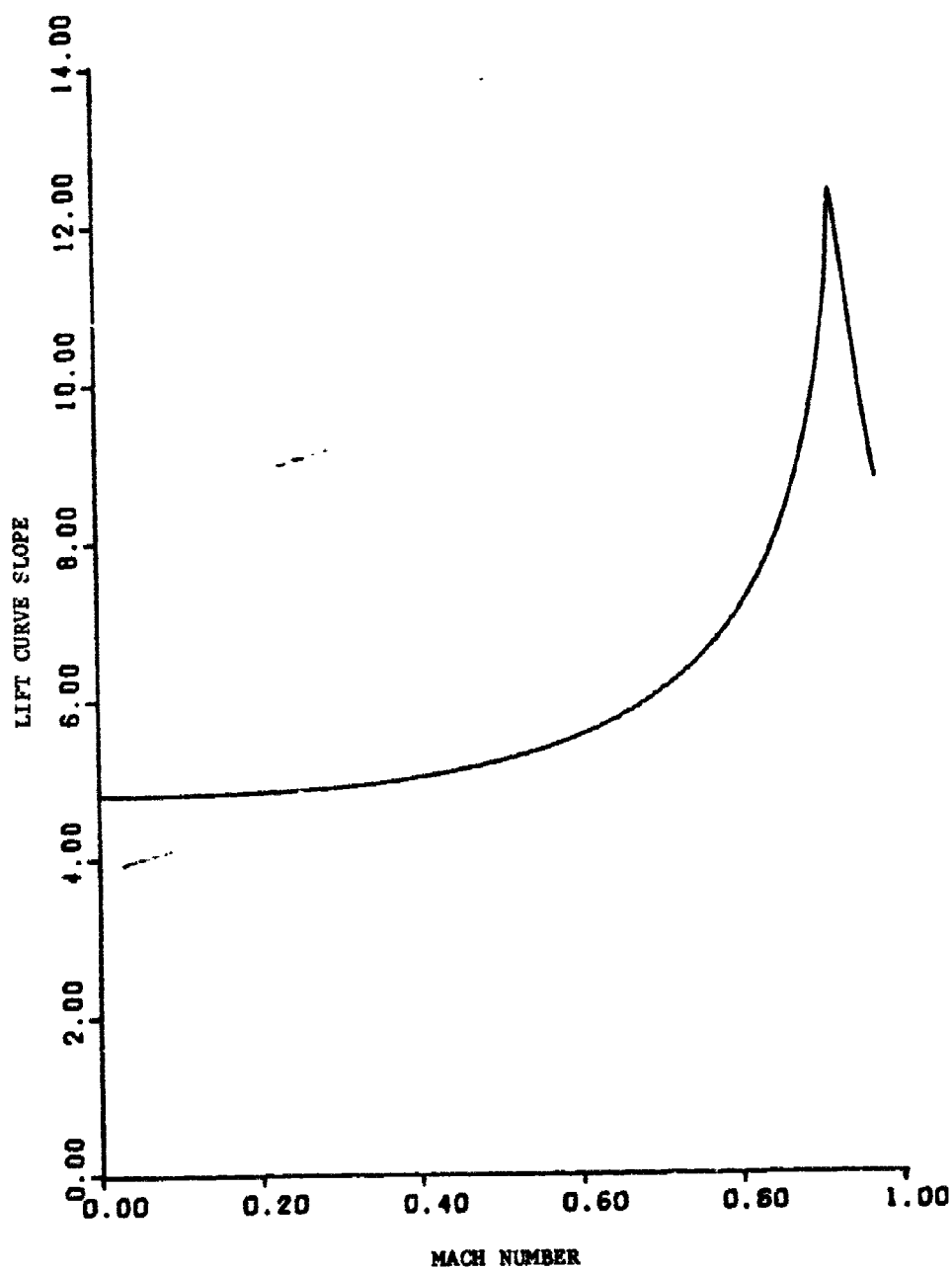


Figure 45. F-111 @ 16° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

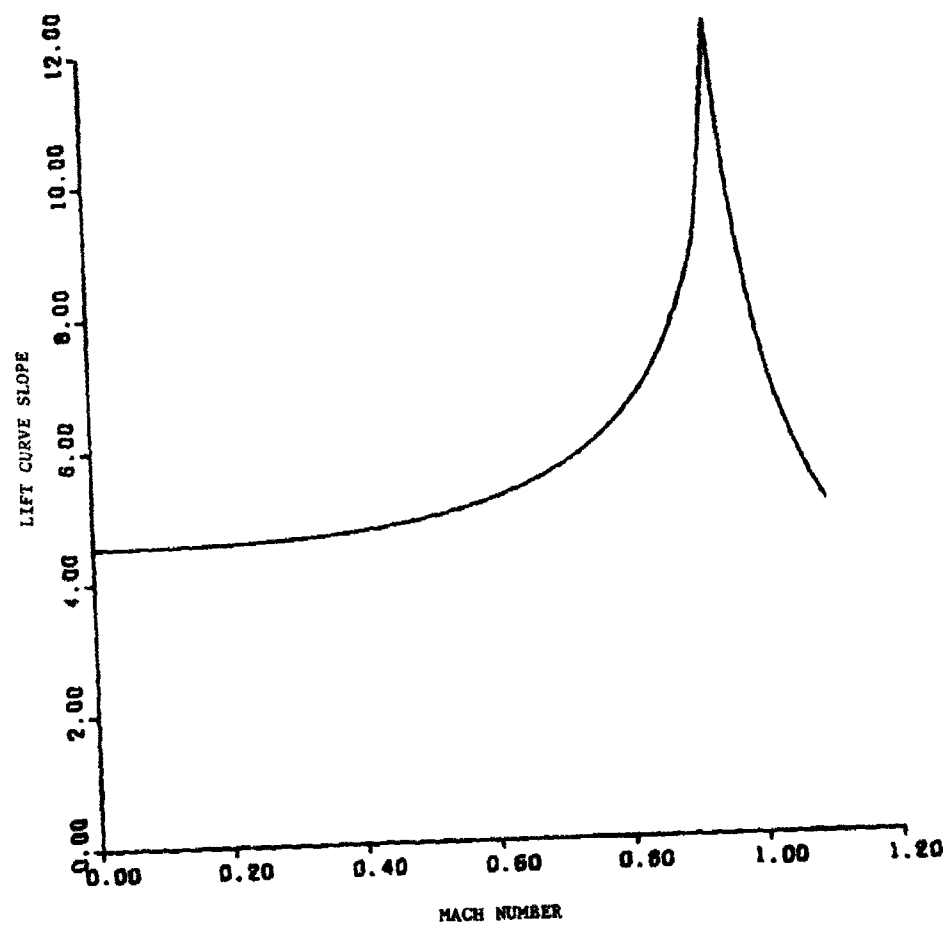


Figure 45. F-111 @ 26° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

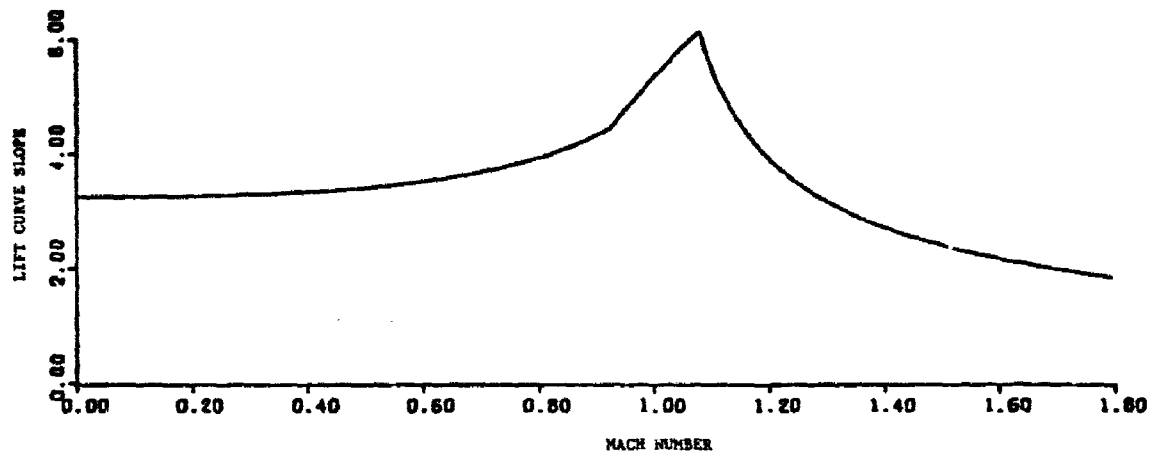


Figure 47. F-111 @ 50° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

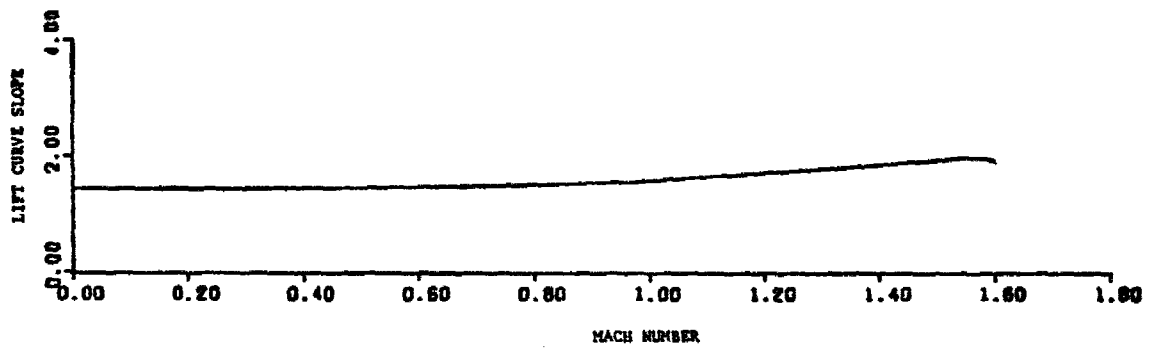


Figure 48. F-111 @ 72° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

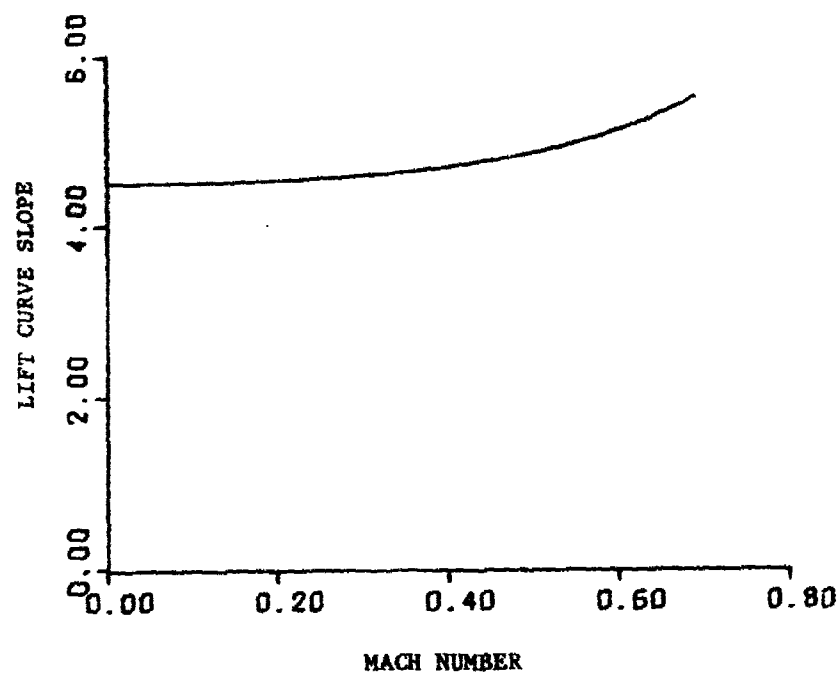


Figure 49. Falcon 10 Lift Curve Slope Vs Mach Number from Empirical Equation

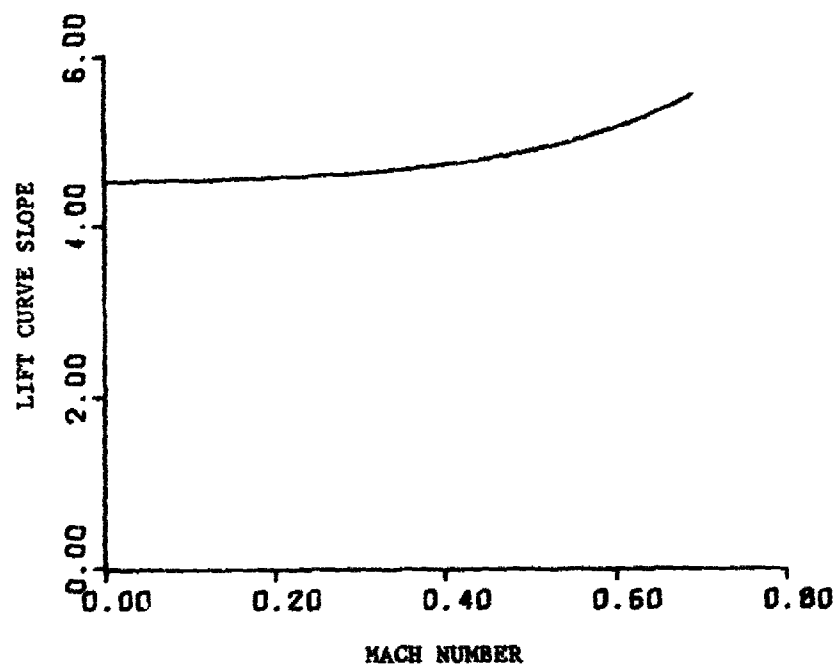


Figure 50. Falcon 50 Lift Curve Slope Vs Mach Number from Empirical Equation

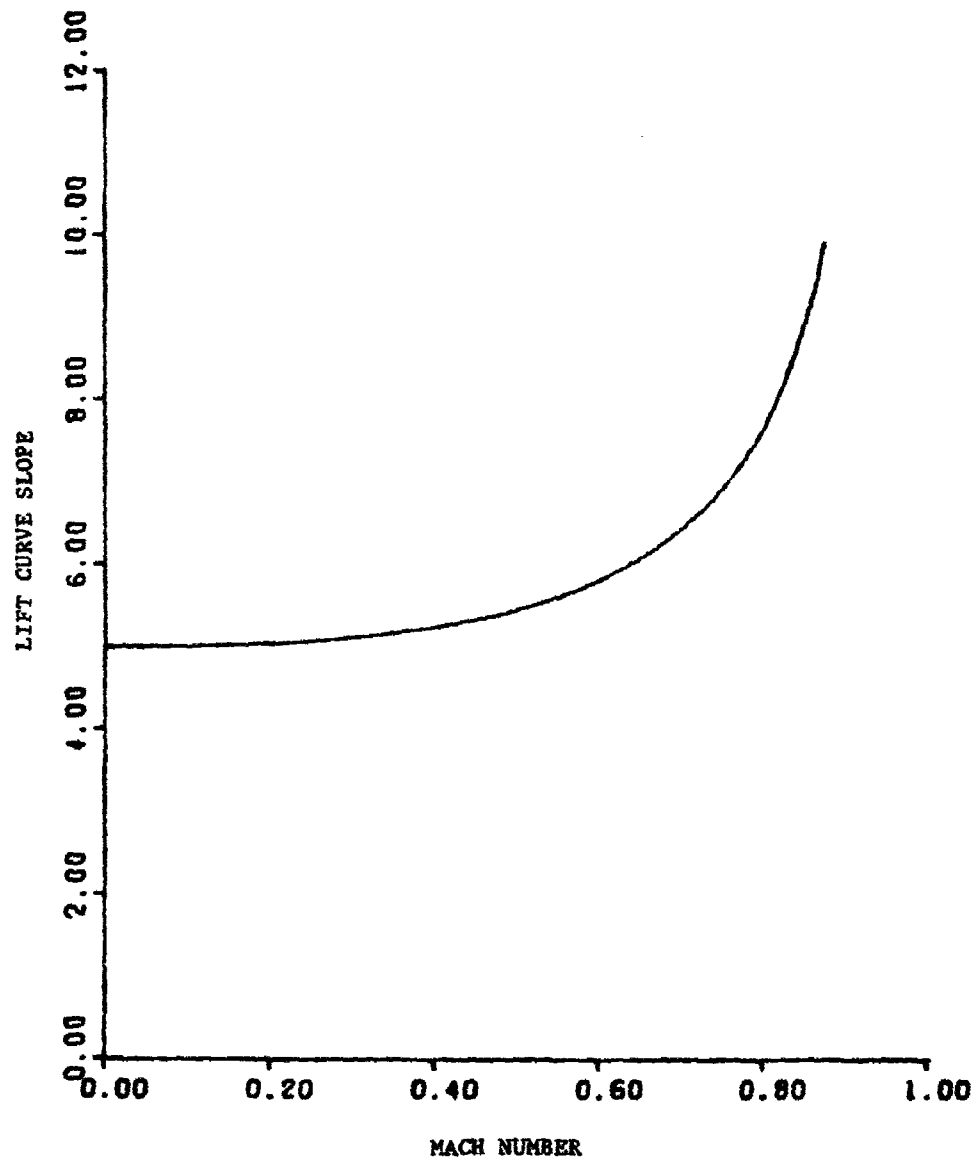


Figure 51. FB-111 @ 16° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation



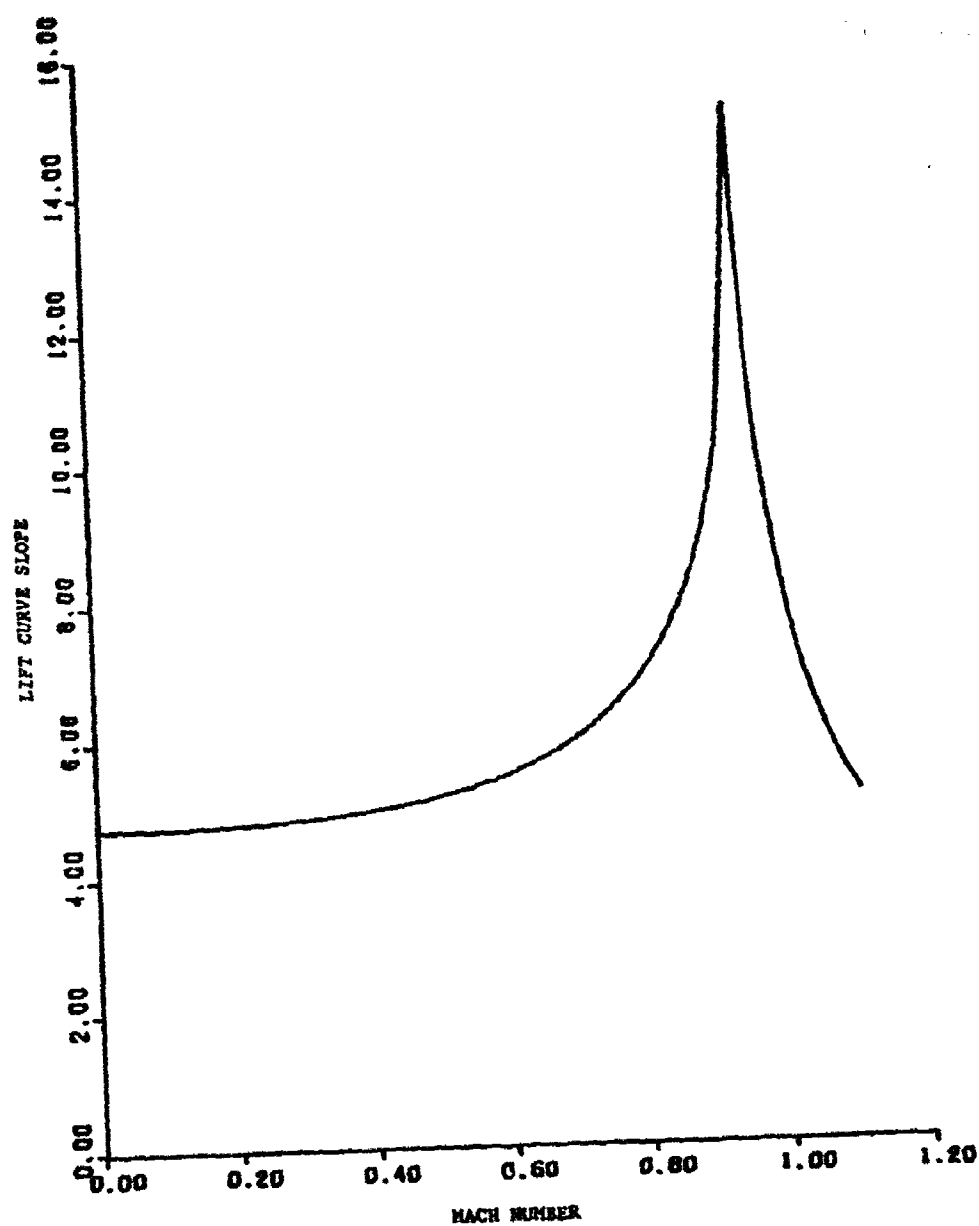


Figure 52. FB-111 @ 26° Sweep Lift Curve Slope Vs Mach Number from Empirical Equation

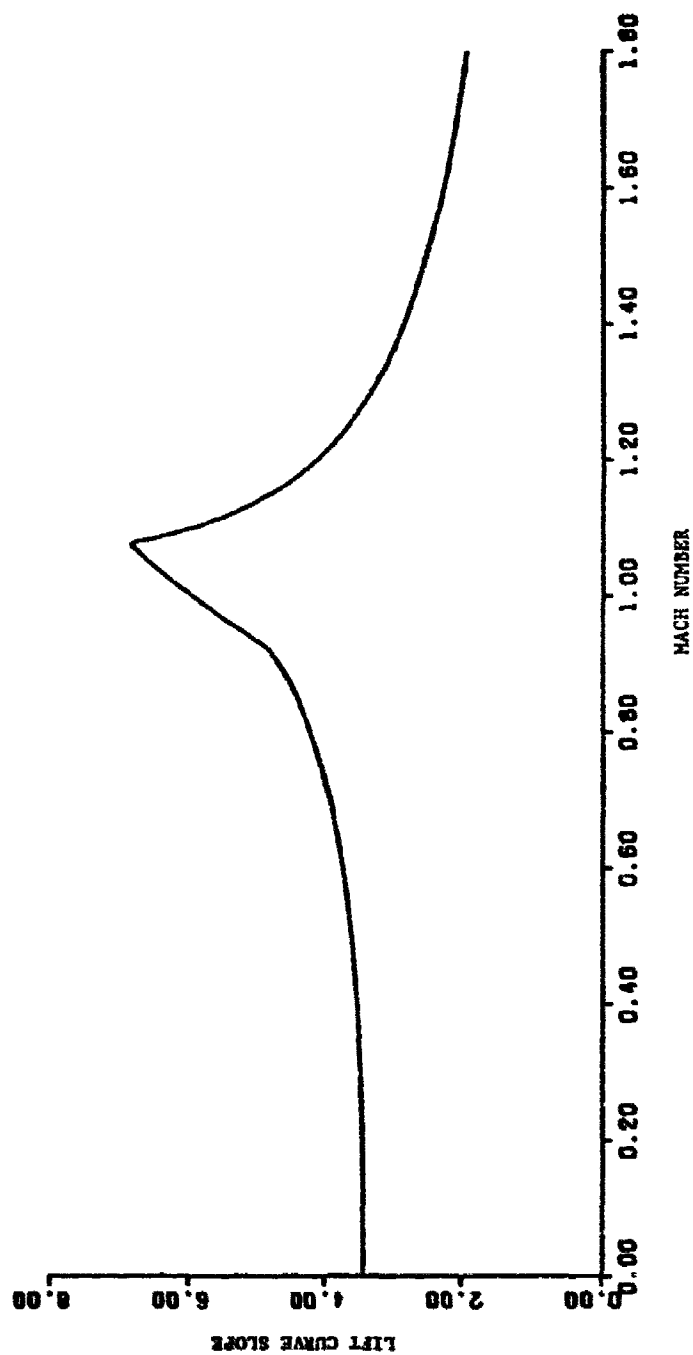


Figure 53. FB-111 @ 50° Sweep Lift Curve Slope Vs Mach Number  
from Empirical Equation

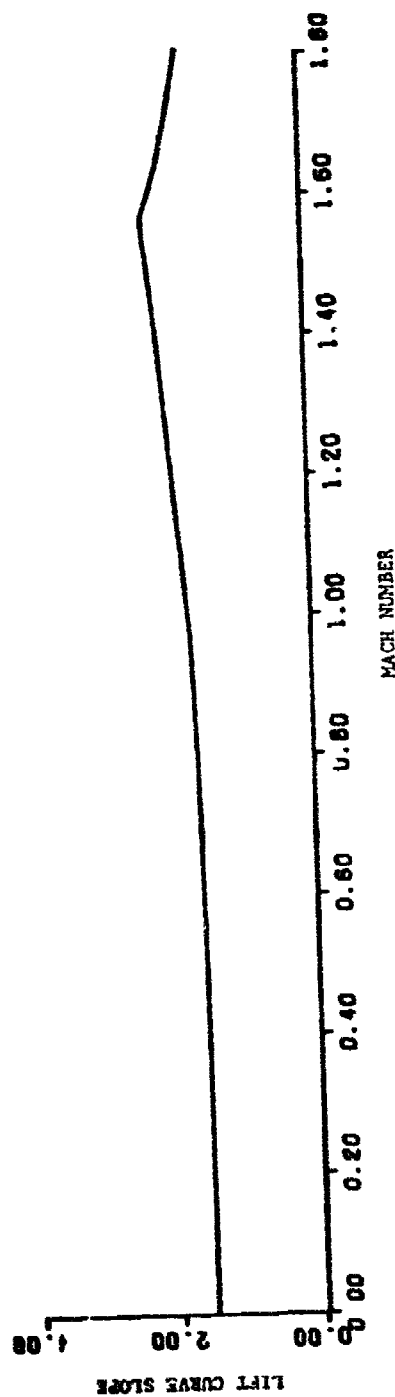


Figure 54. FB-111 @ 72° Sweep Lift Curve Slope Vs Mach Number  
from Empirical Equation

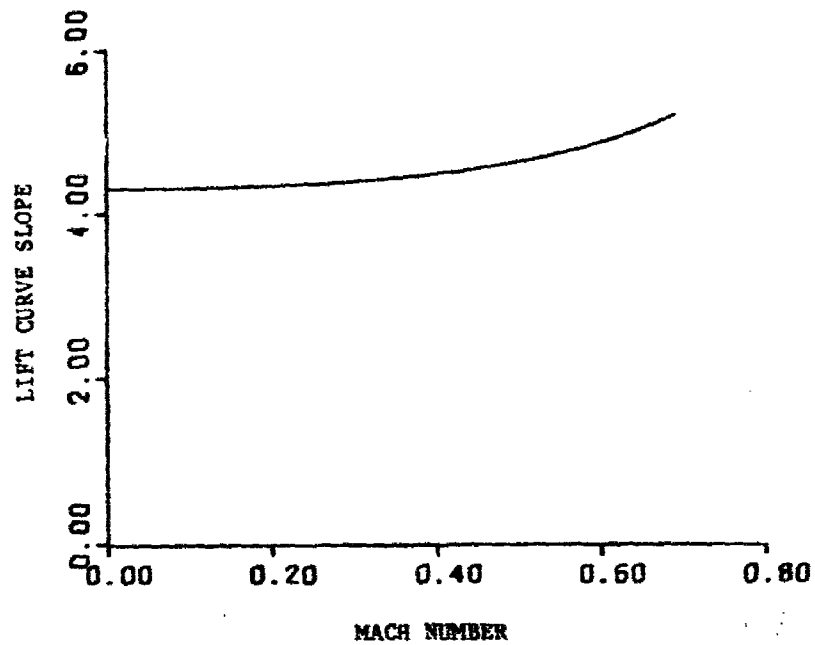


Figure 55. Fan Jet Falcon (FJF) 20 C, D, E Lift Curve Slope Vs Mach Number from Empirical Equation

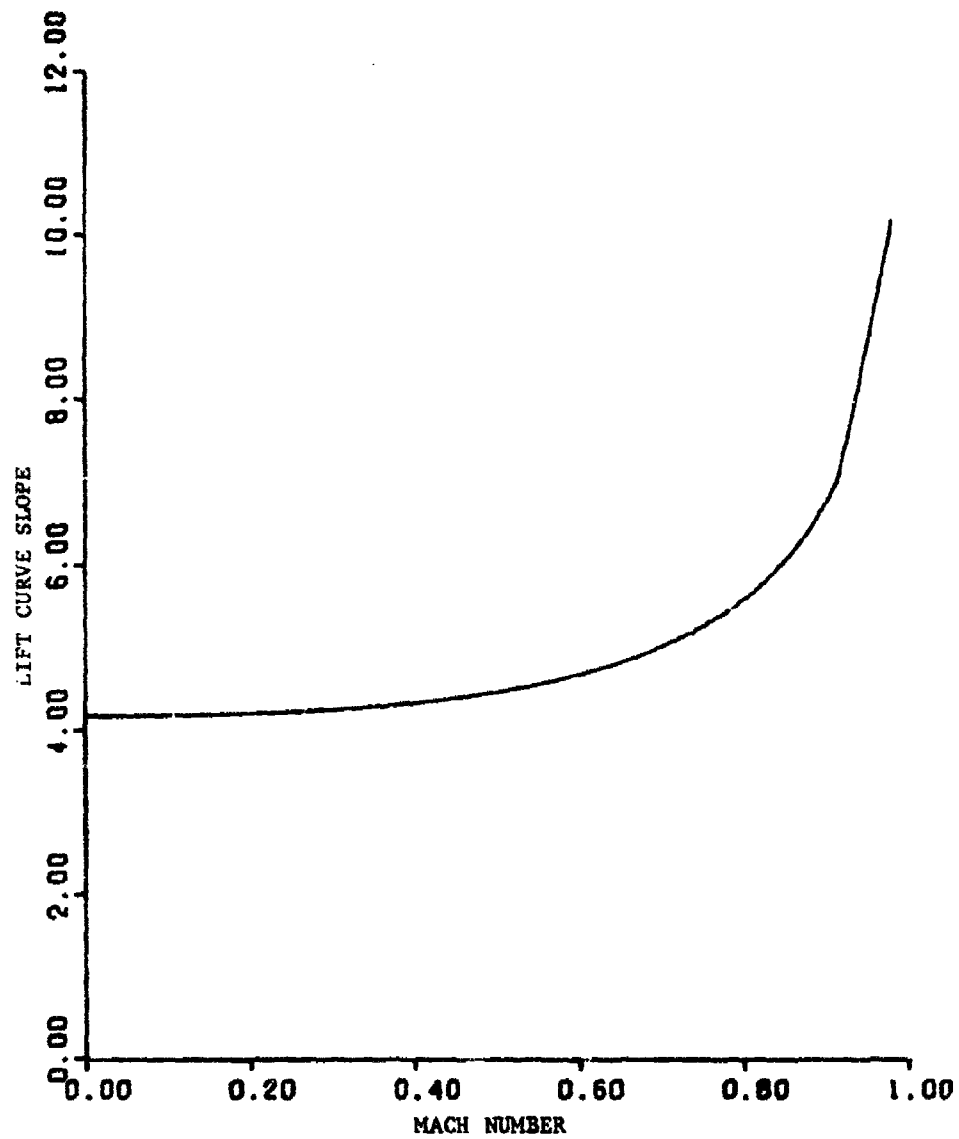


Figure 56. KC-135 Lift Curve Slope Vs Mach Number from Empirical Equation

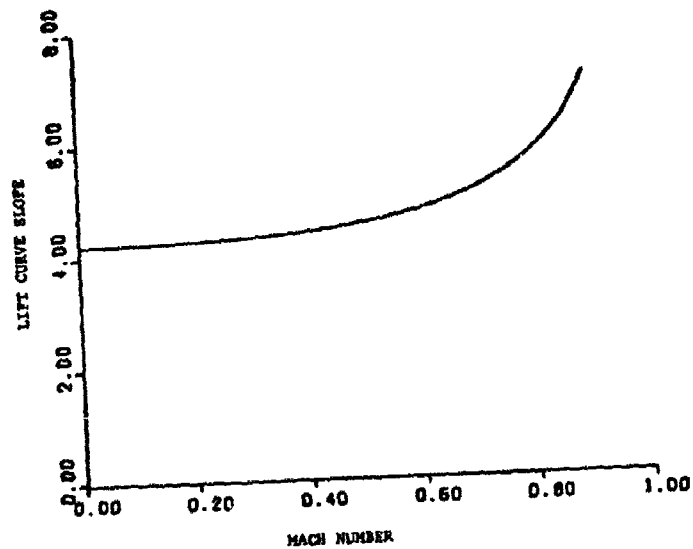


Figure 57. Lear Jet 23, 24, 25 Lift Curve Slope Vs Mach Number from Empirical Equation

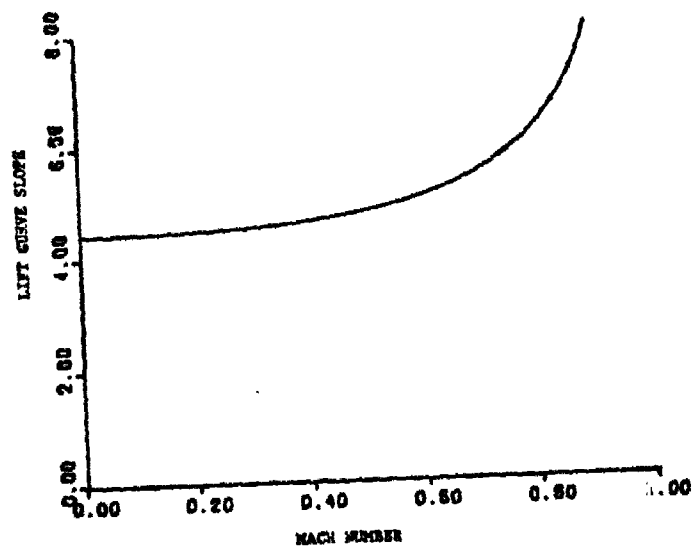


Figure 58. Lear Jet 36 Lift Curve Slope Vs Mach Number from Empirical Equation

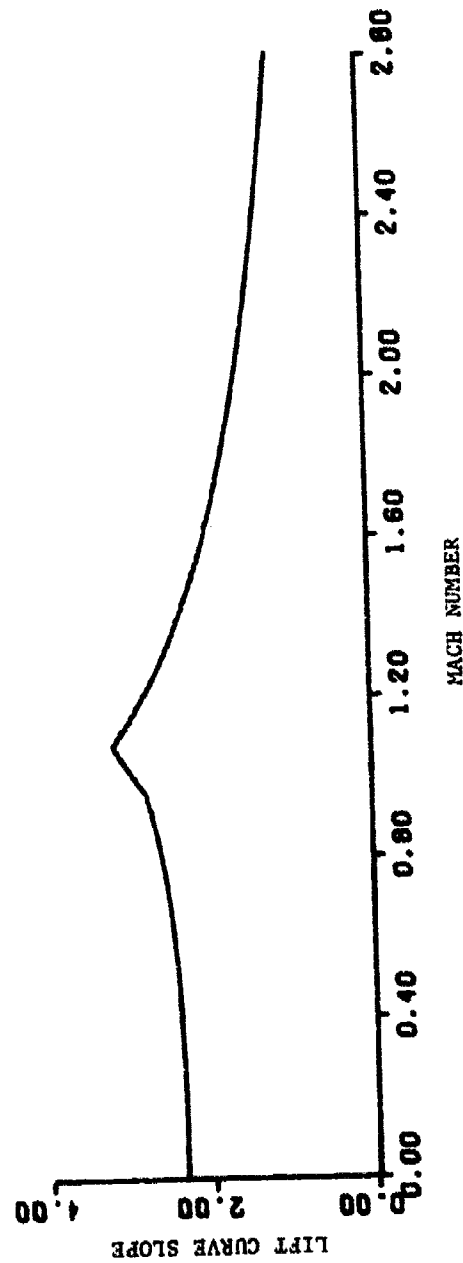


Figure 59. SR-71 Lift Curve Slope Vs Mach Number from Empirical Equation

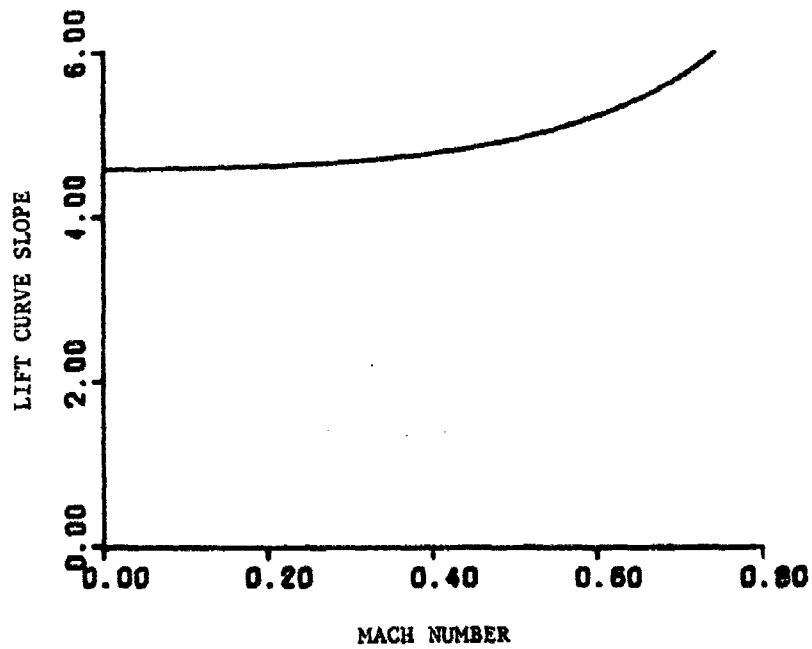


Figure 60. T-34 Lift Curve Slope Vs Mach Number from Empirical Equation



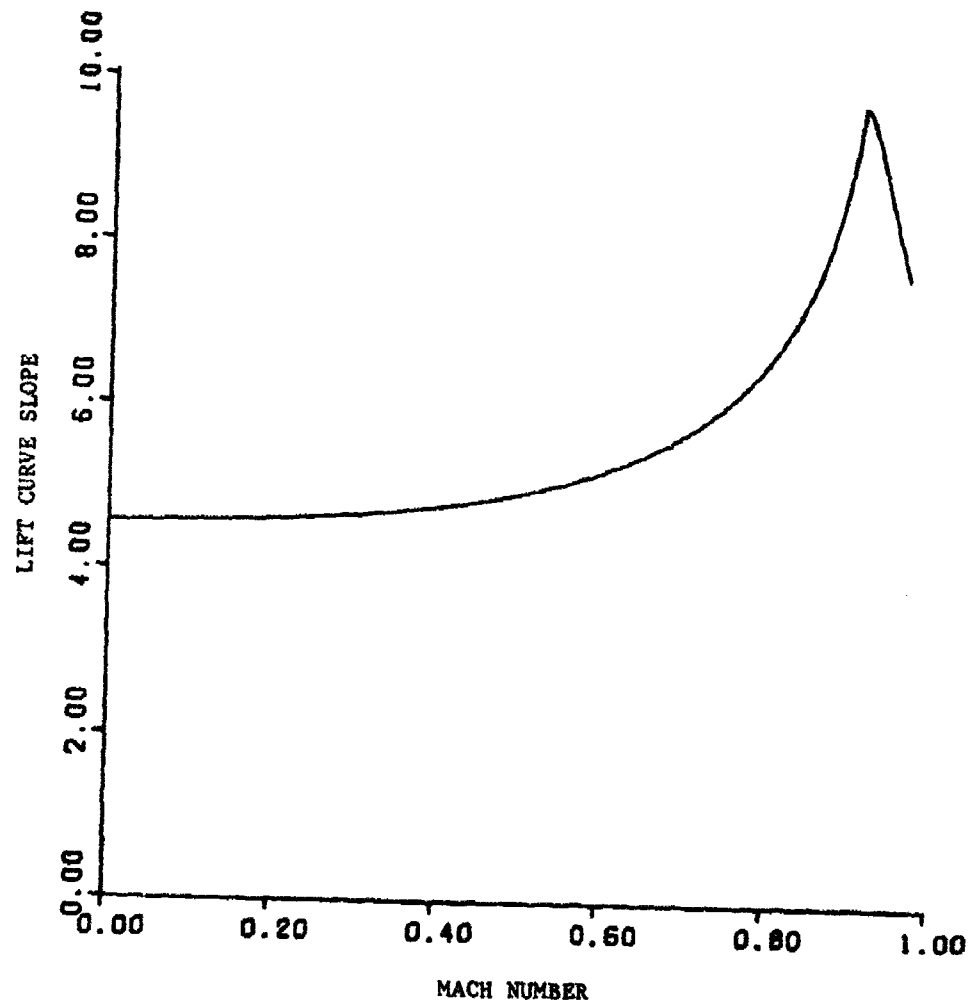


Figure 61. T-37 Lift Curve Slope Vs Mach Number from Empirical Equation

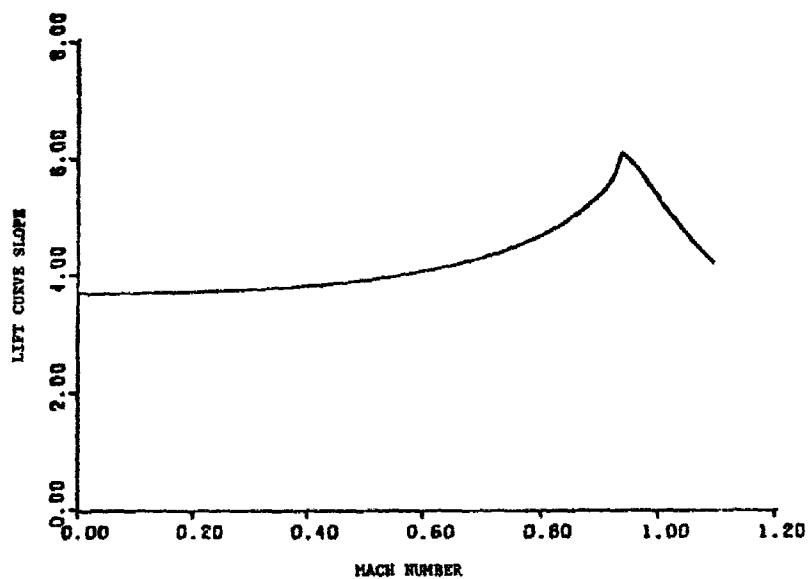


Figure 62. T-38 Lift Curve Slope Vs Mach Number from Empirical Equation

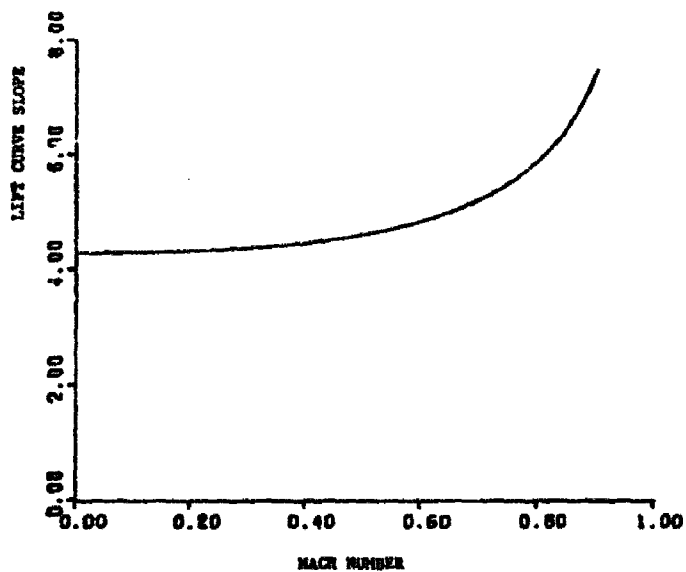


Figure 63. T-39A Lift Curve Slope Vs Mach Number from Empirical Equation

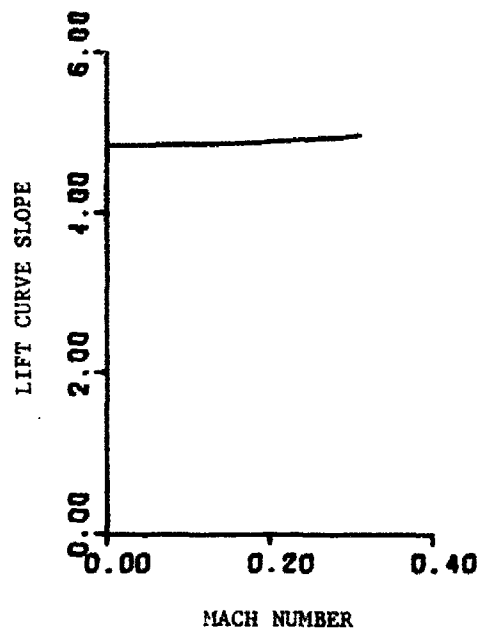


Figure 64. T-41 Lift Curve Slope Vs Mach Number from Empirical Equation

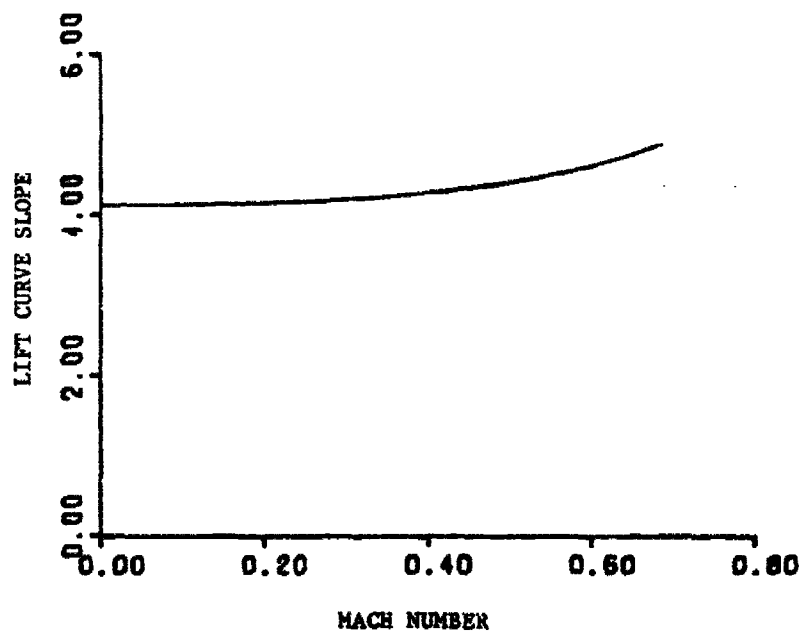


Figure 65. VC-140 Lift Curve Slope Vs Mach Number from Empirical Equation

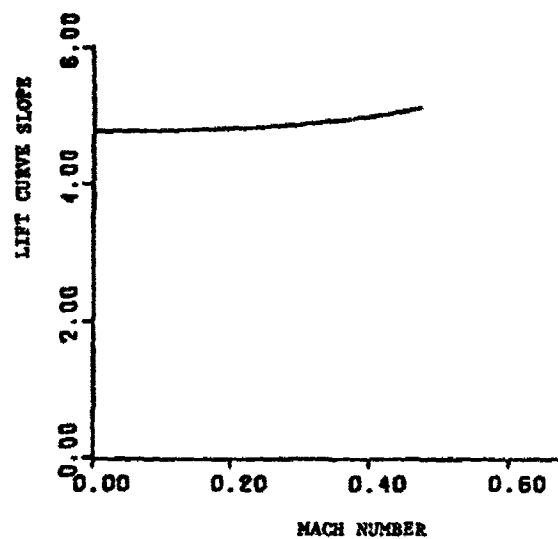


Figure 66. O-2 Lift Curve Slope Vs Mach Number from Empirical Equation

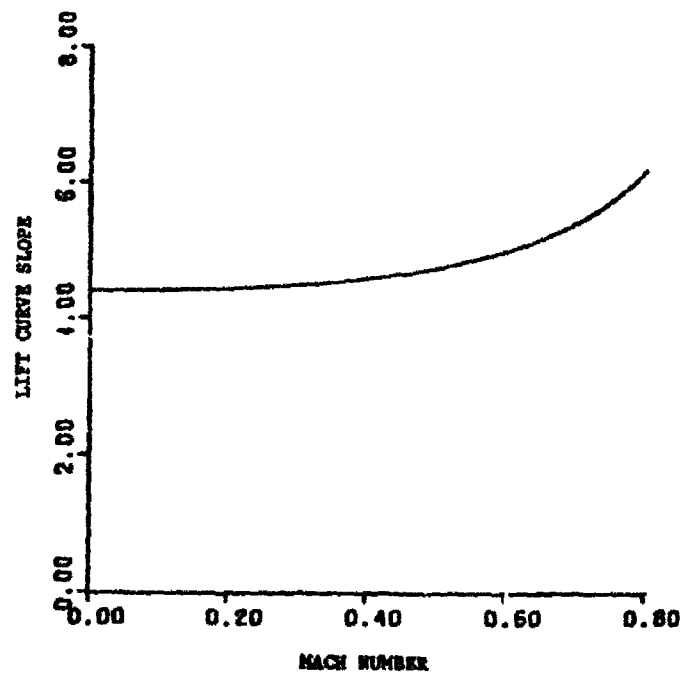


Figure 67. OV-10 Lift Curve Slope Vs Mach Number from Empirical Equation

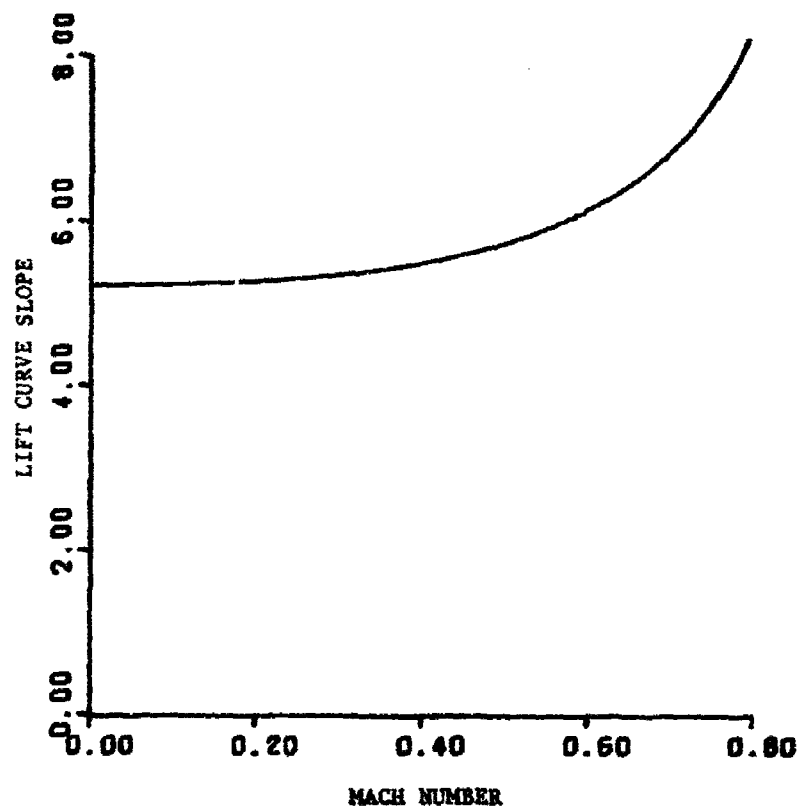


Figure 68. U-2 Lift Curve Slope Vs Mach Number from Empirical Equation

APPENDIX B

PLOTS OF GUST SENSITIVITY VERSUS  
CALIBRATED AIRSPEED FOR VARIOUS  
AIRCRAFT

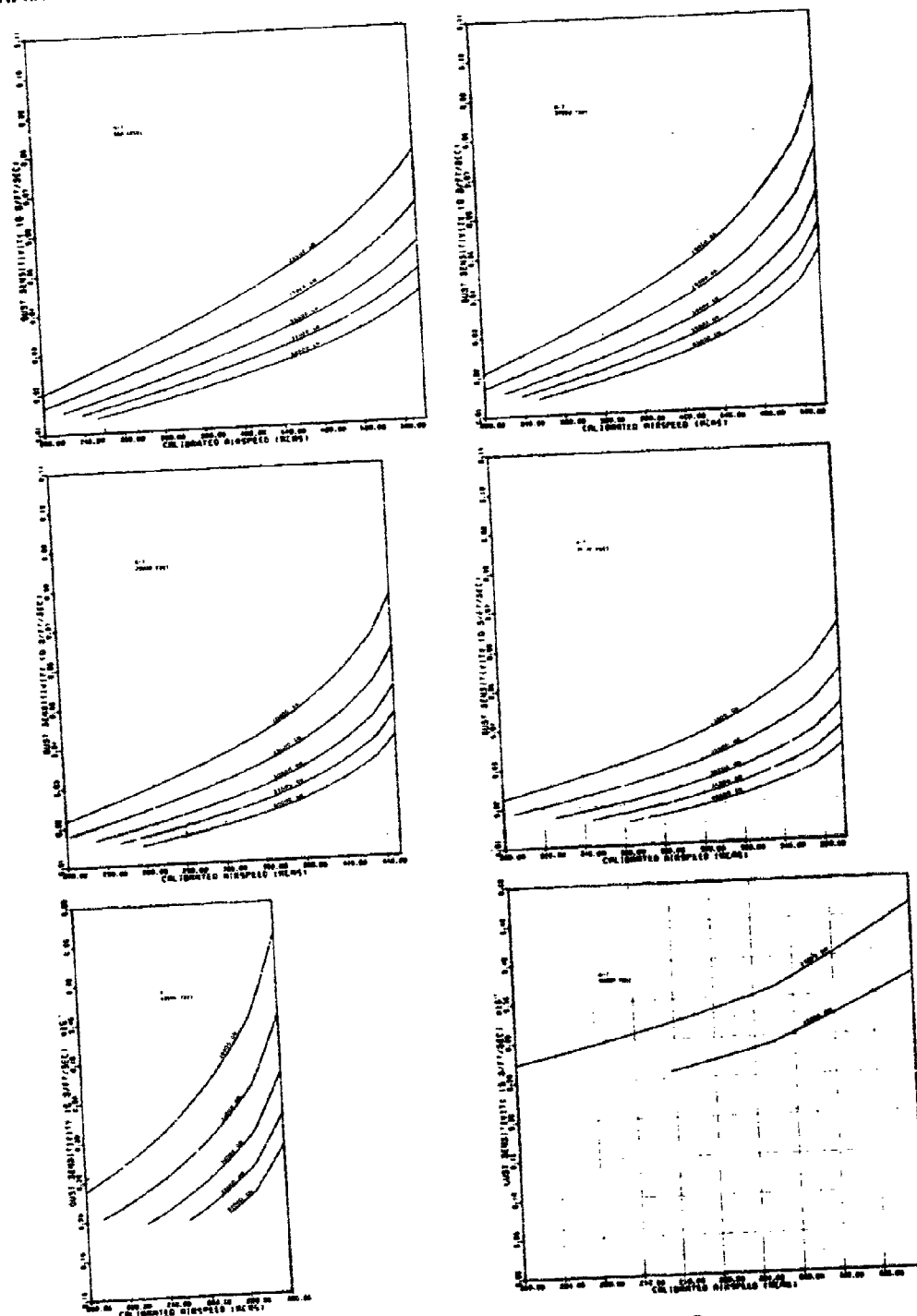


Figure 69. Gust Sensitivity of A-7

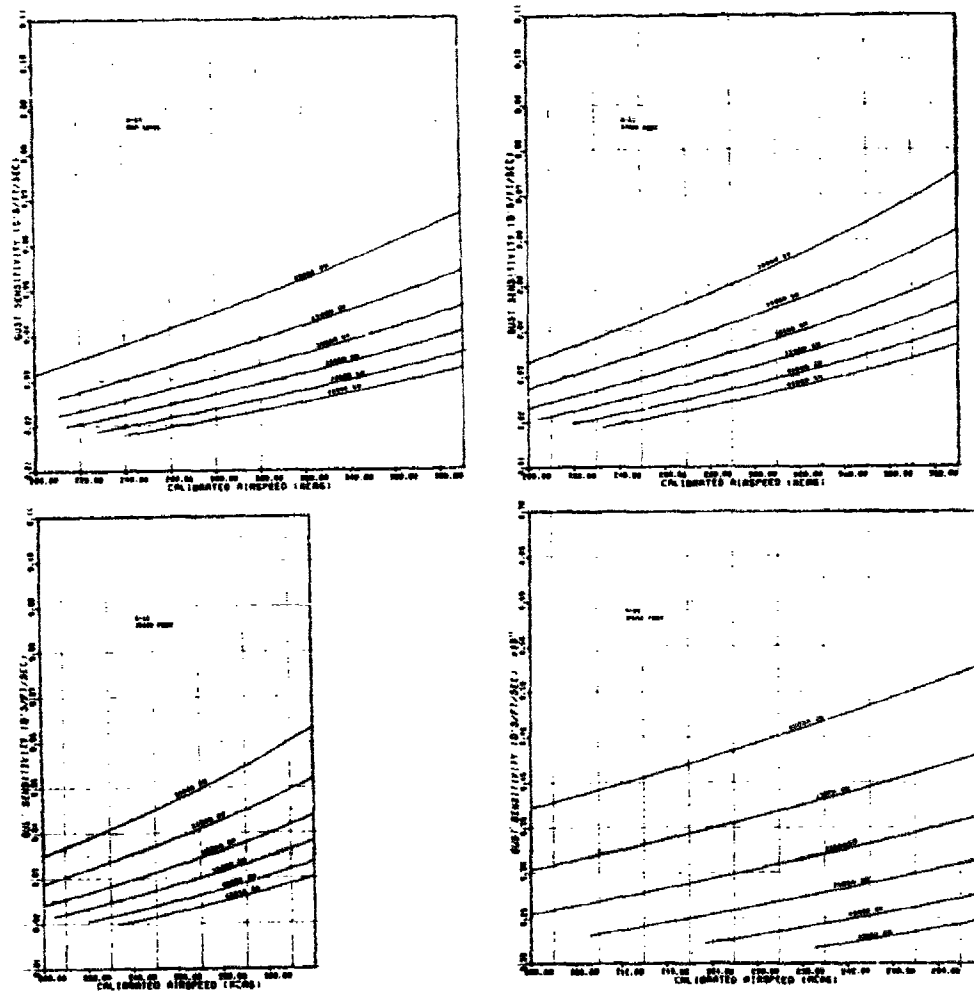


Figure 70. Gust Sensitivity of A-10



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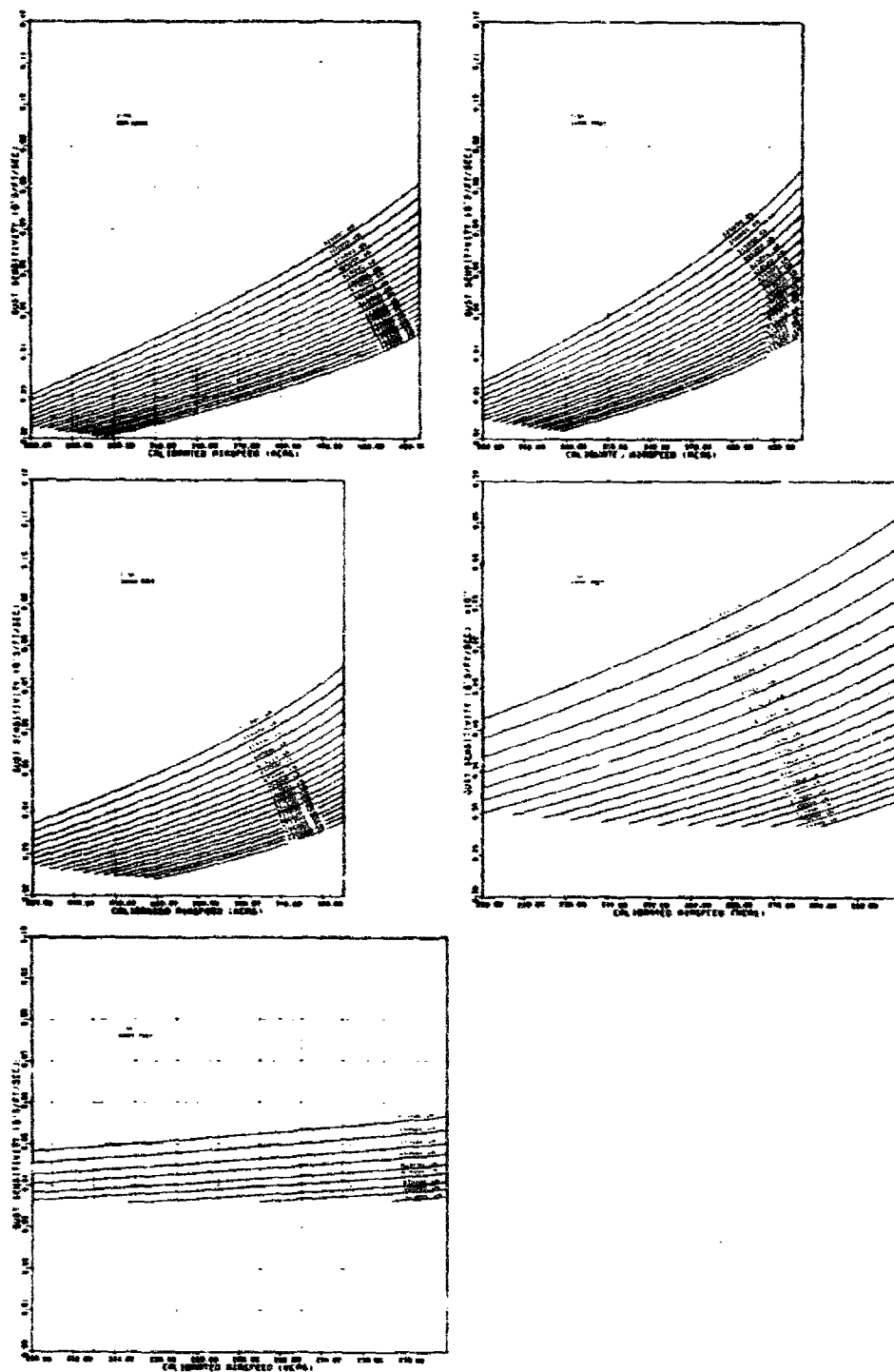


Figure 72. Gust Sensitivity of C-5A

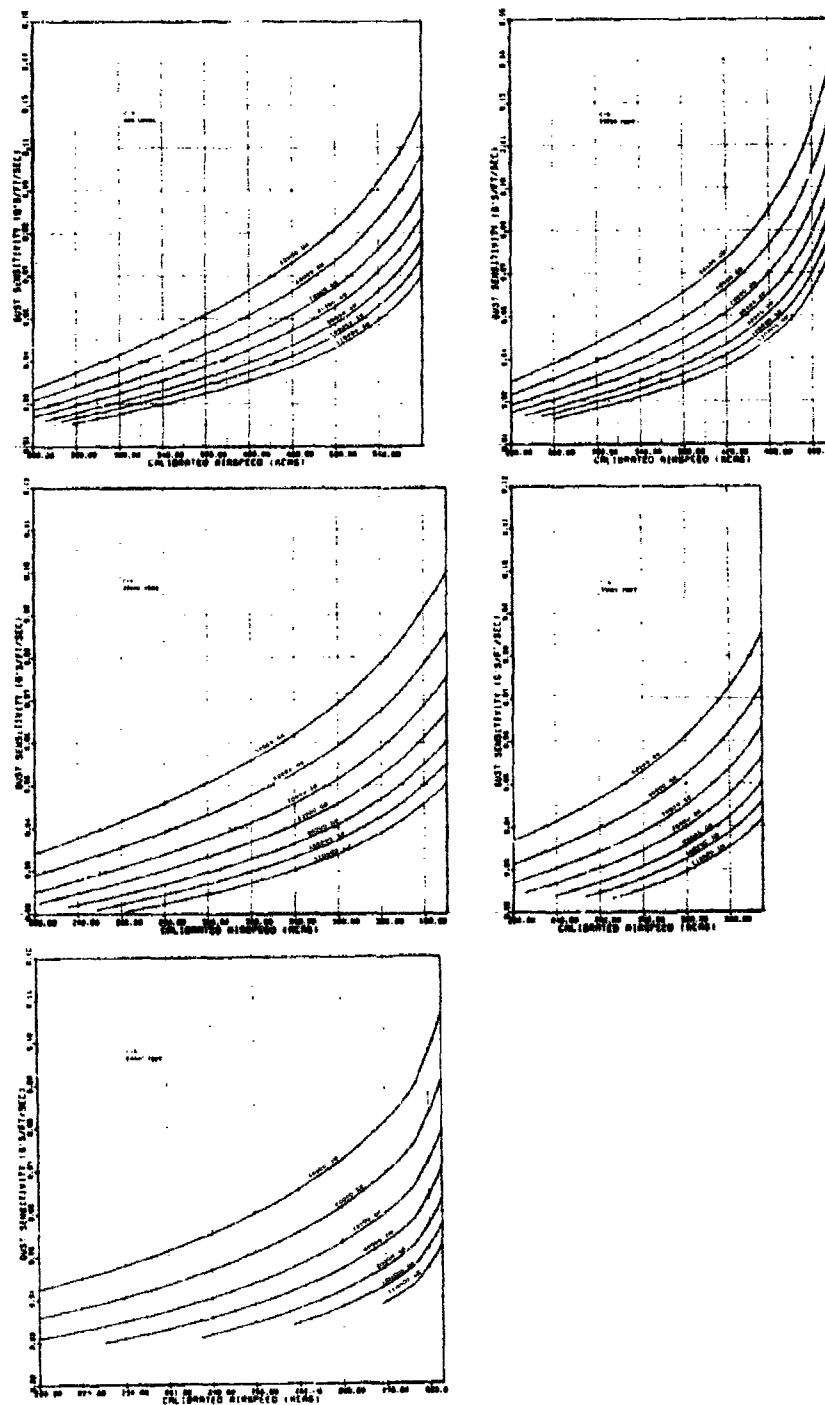


Figure 73. Gust Sensitivity of C-9

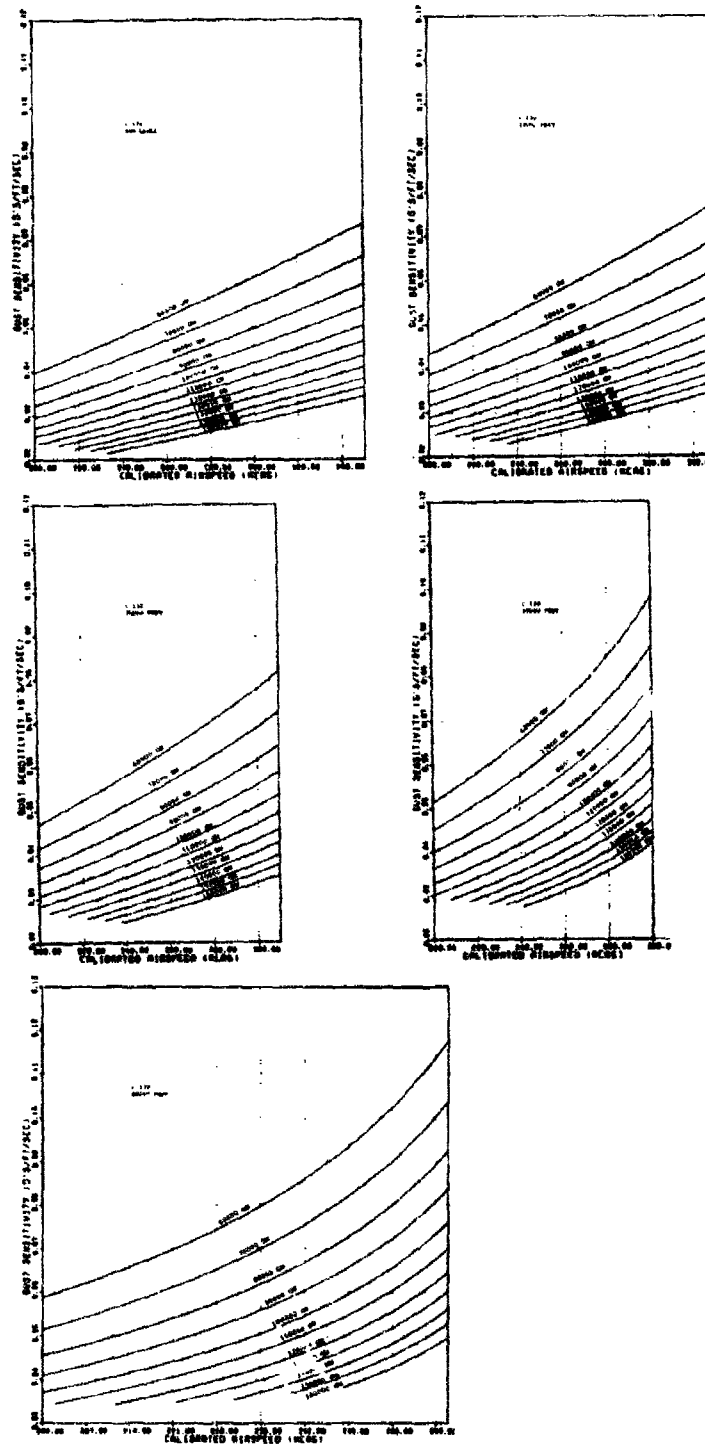


Figure 74. Gust Sensitivity of C-130

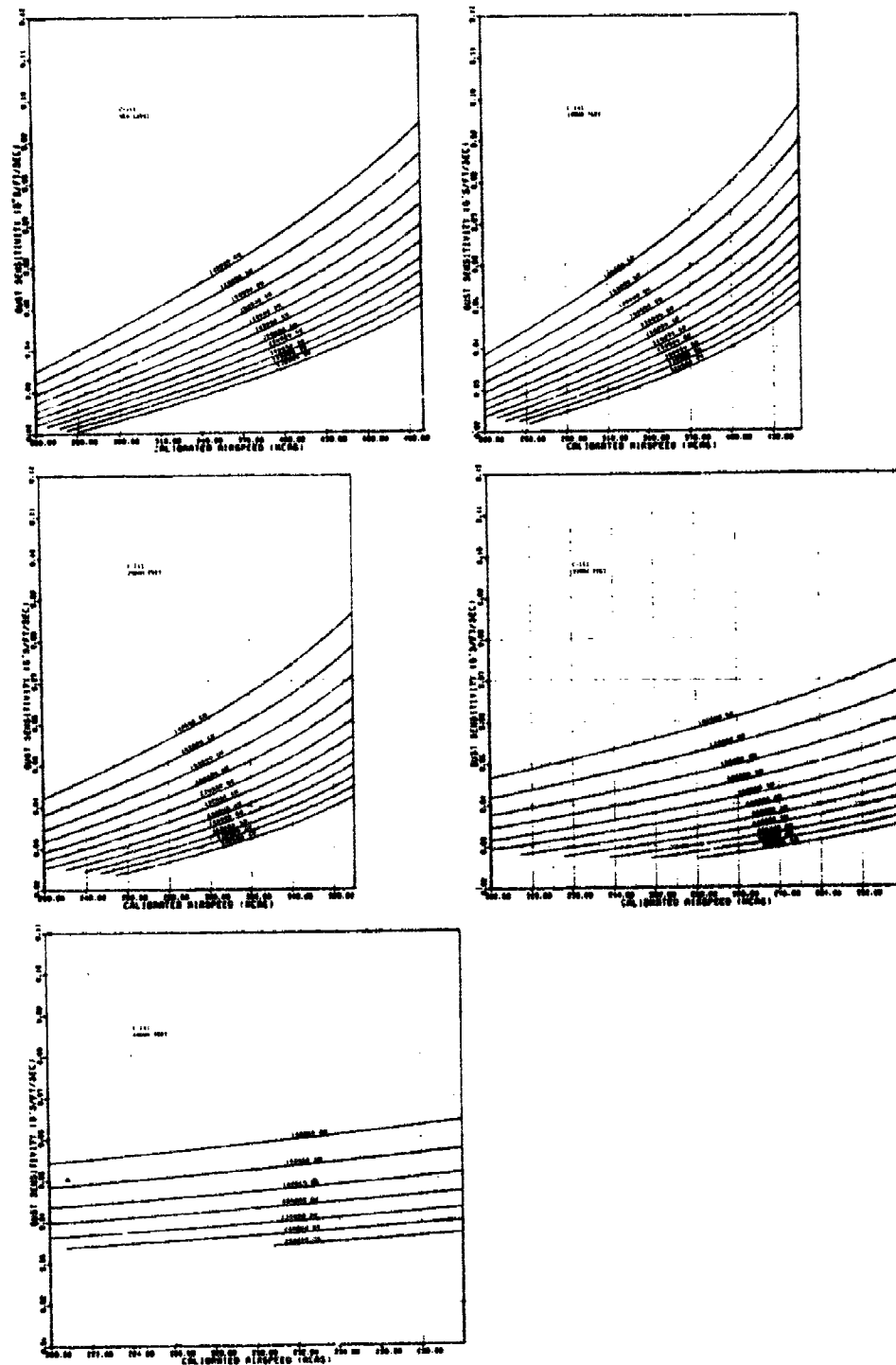


Figure 75. Gust Sensitivity of C-141

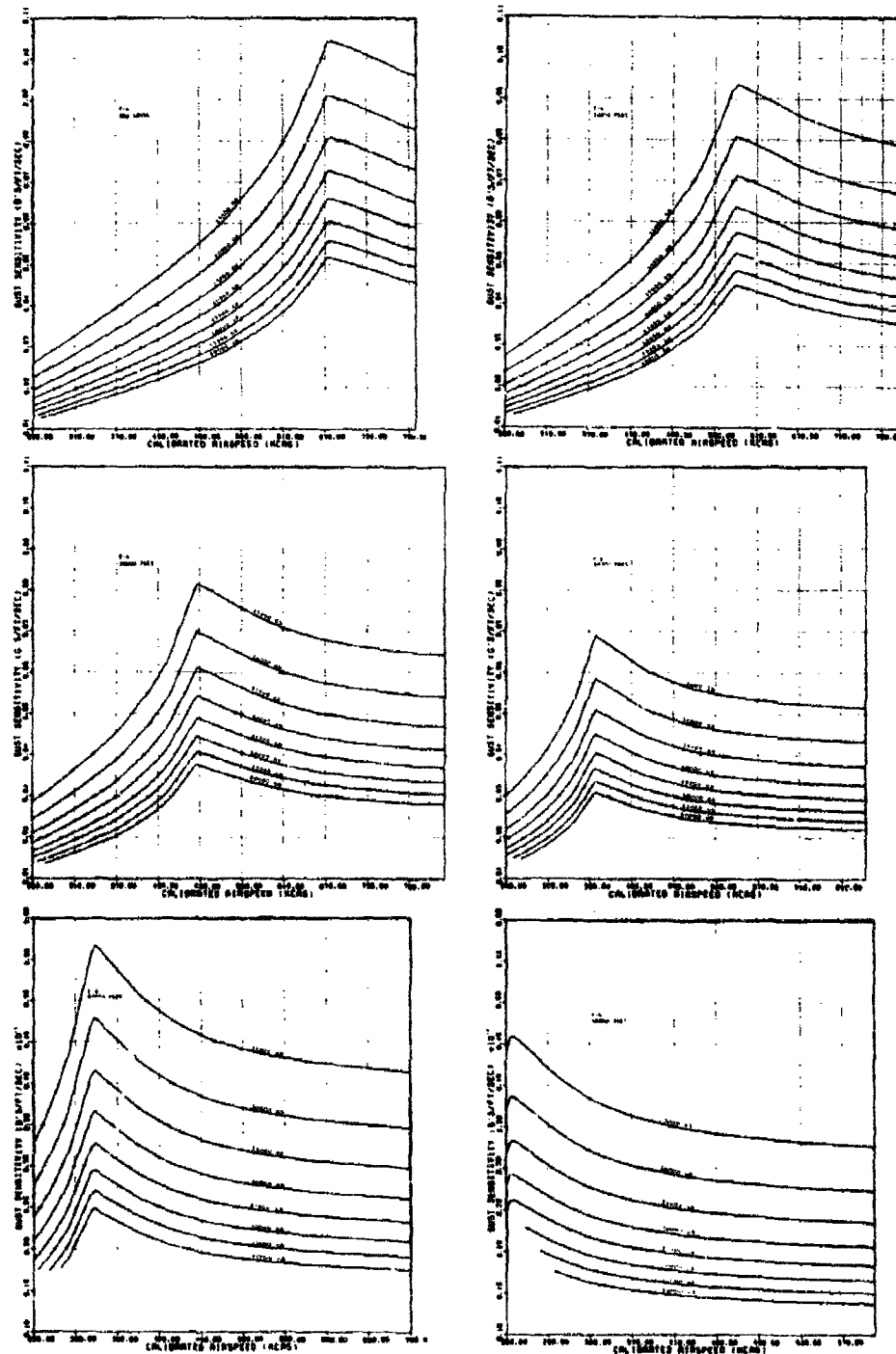


Figure 76. Gust Sensitivity of F-4

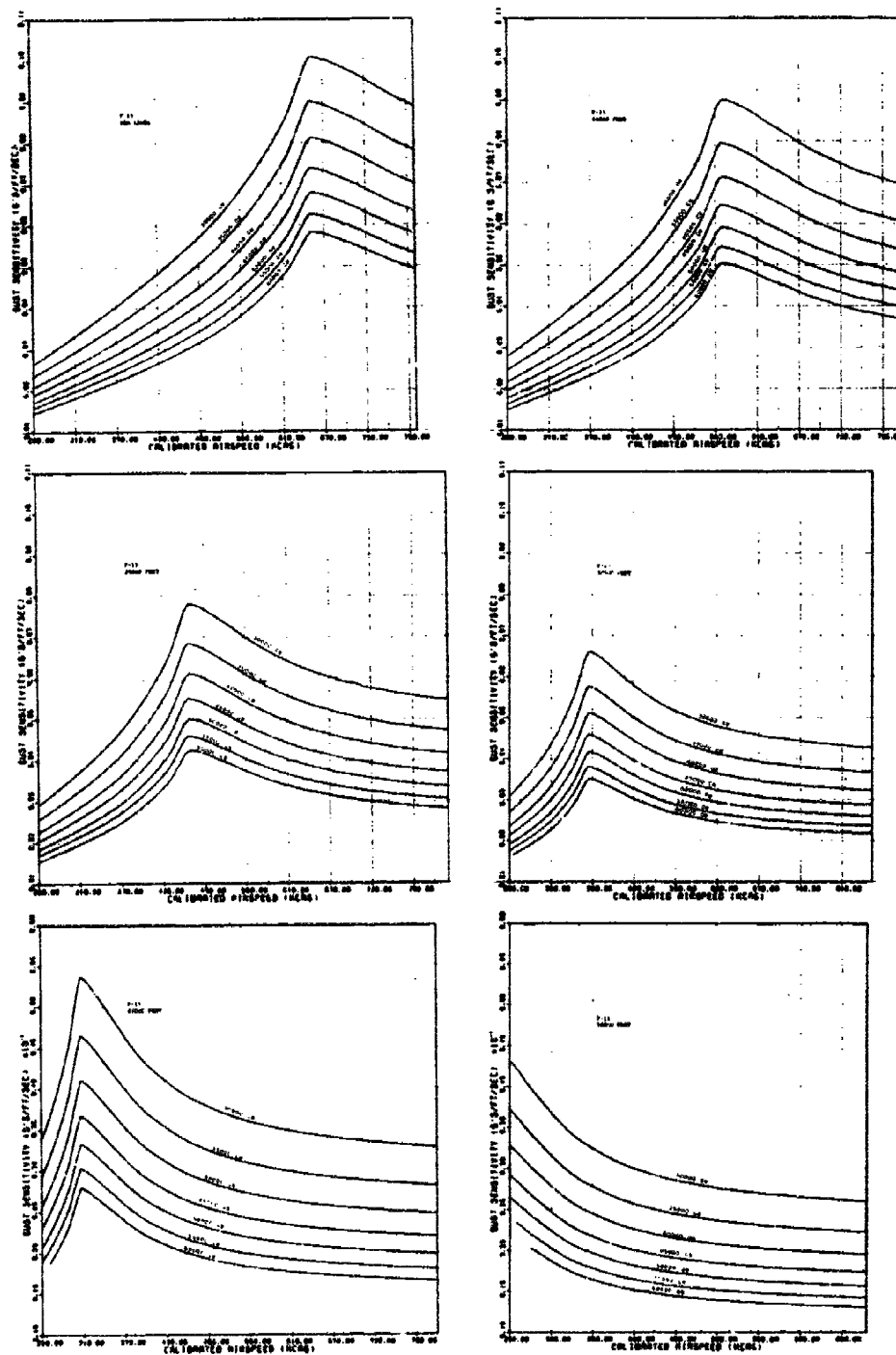


Figure 77. Gust Sensitivity of F-15

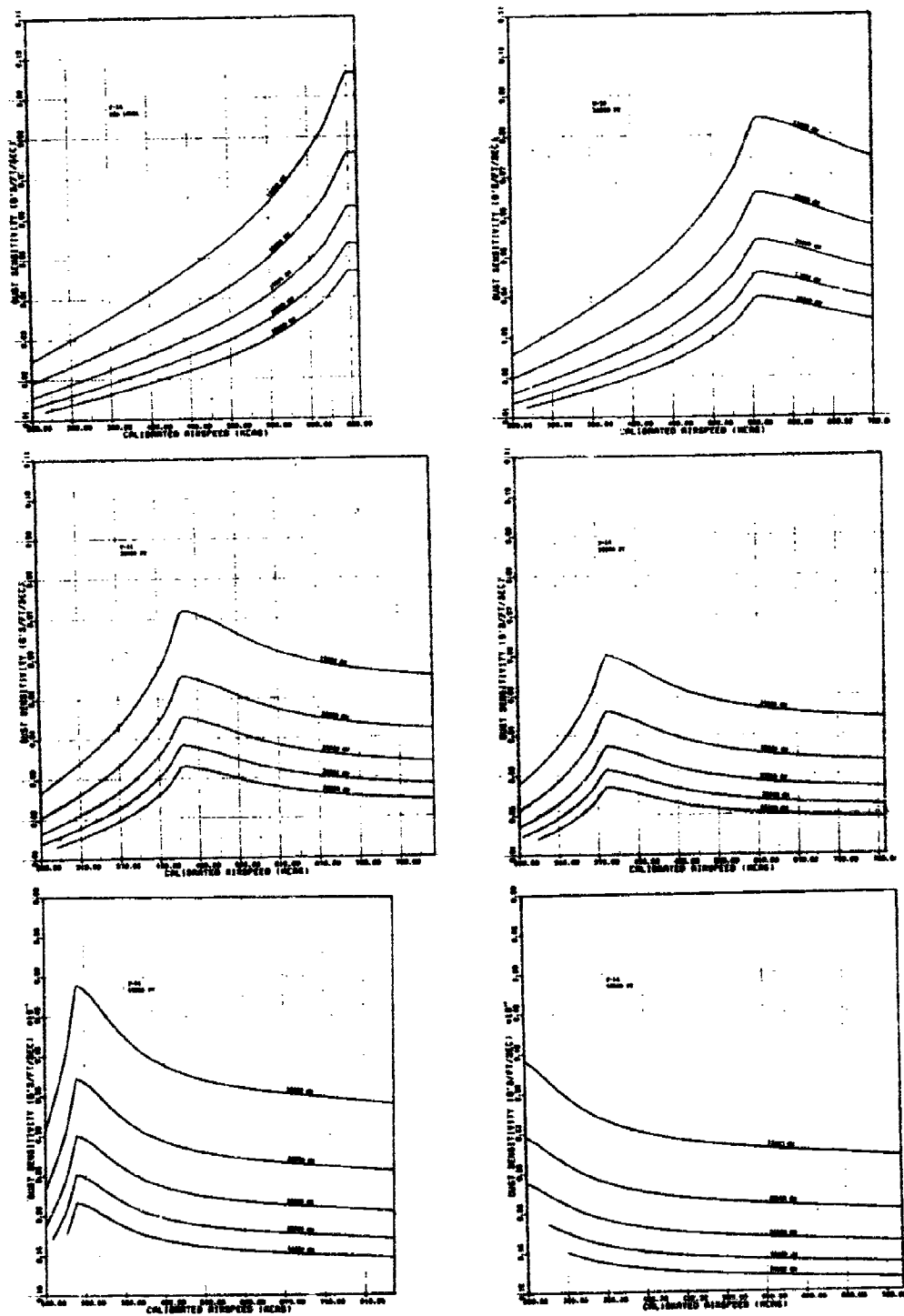


Figure 78. Gust Sensitivity of F-16



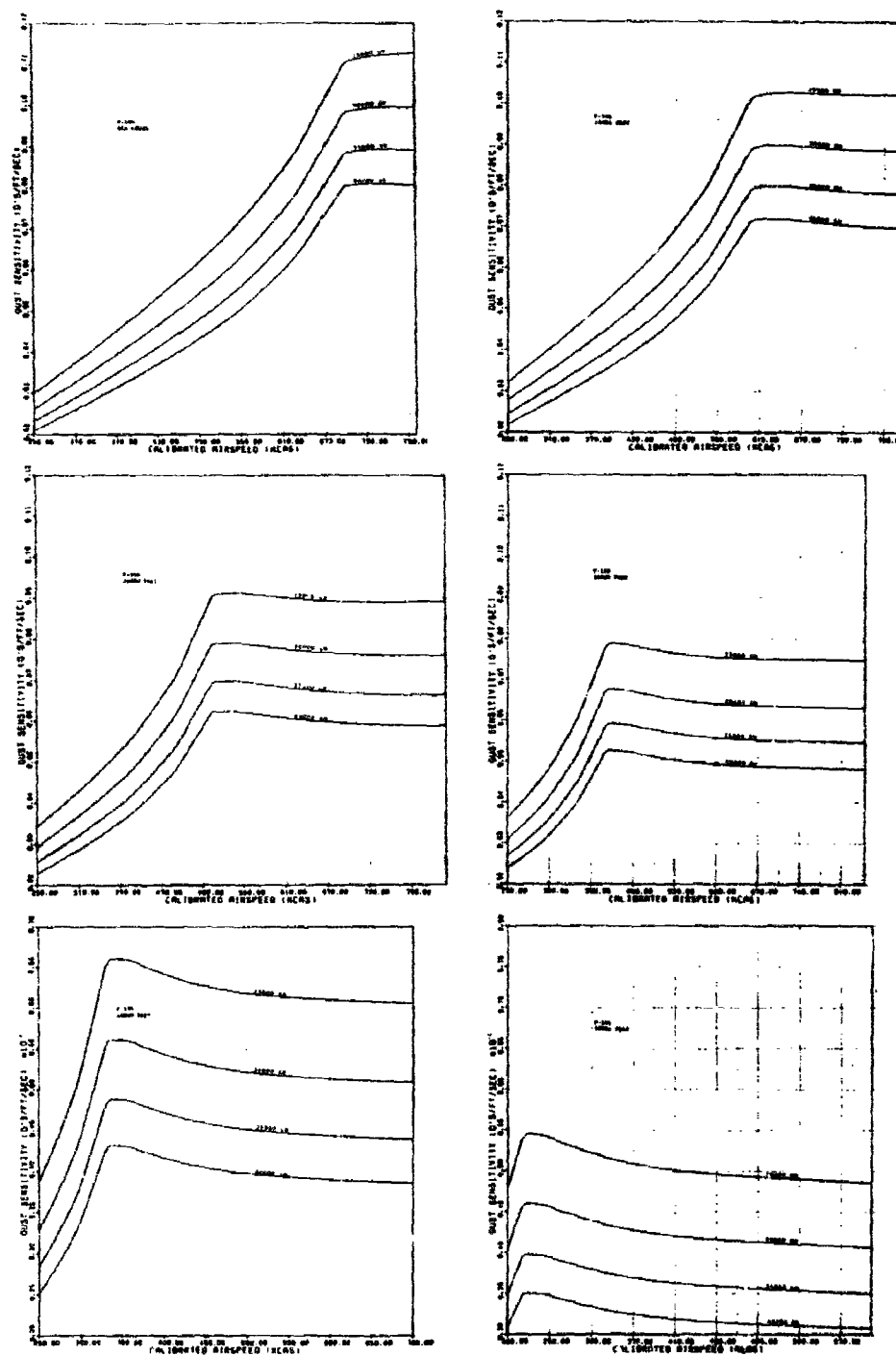


Figure 79. Gust Sensitivity of F-106

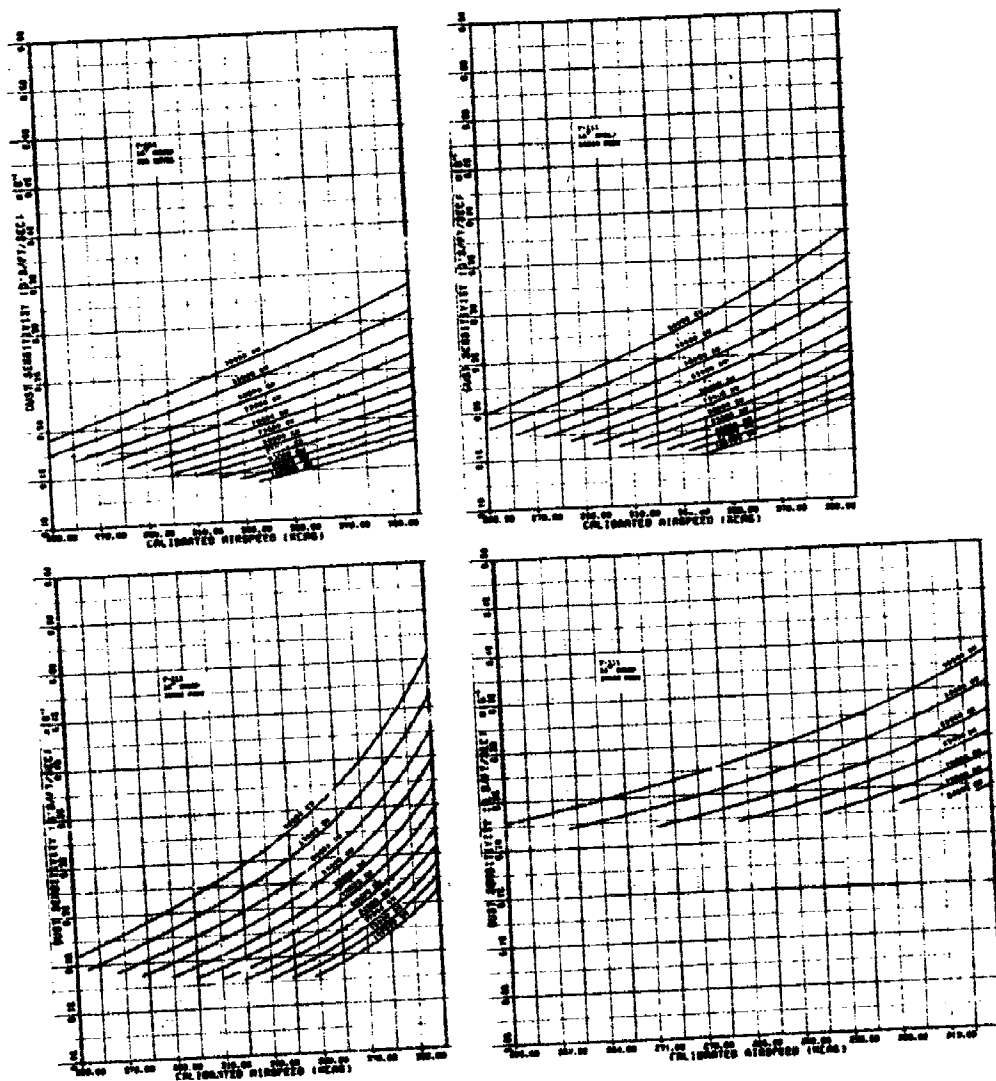


Figure 80. Gust Sensitivity of F-111 @ 16° Sweep

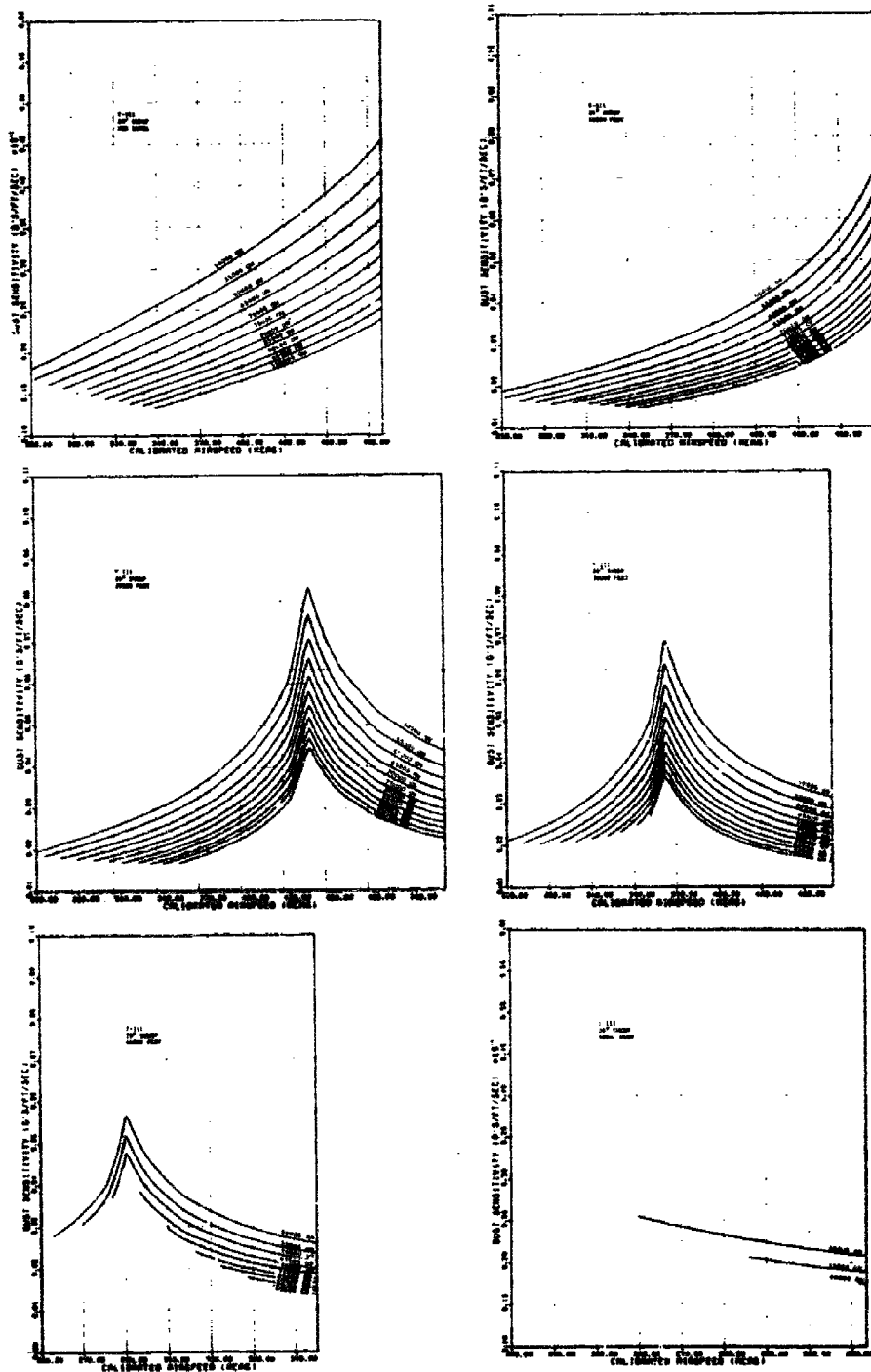


Figure 81. Gust Sensitivity of F-111 @ 26° Sweep

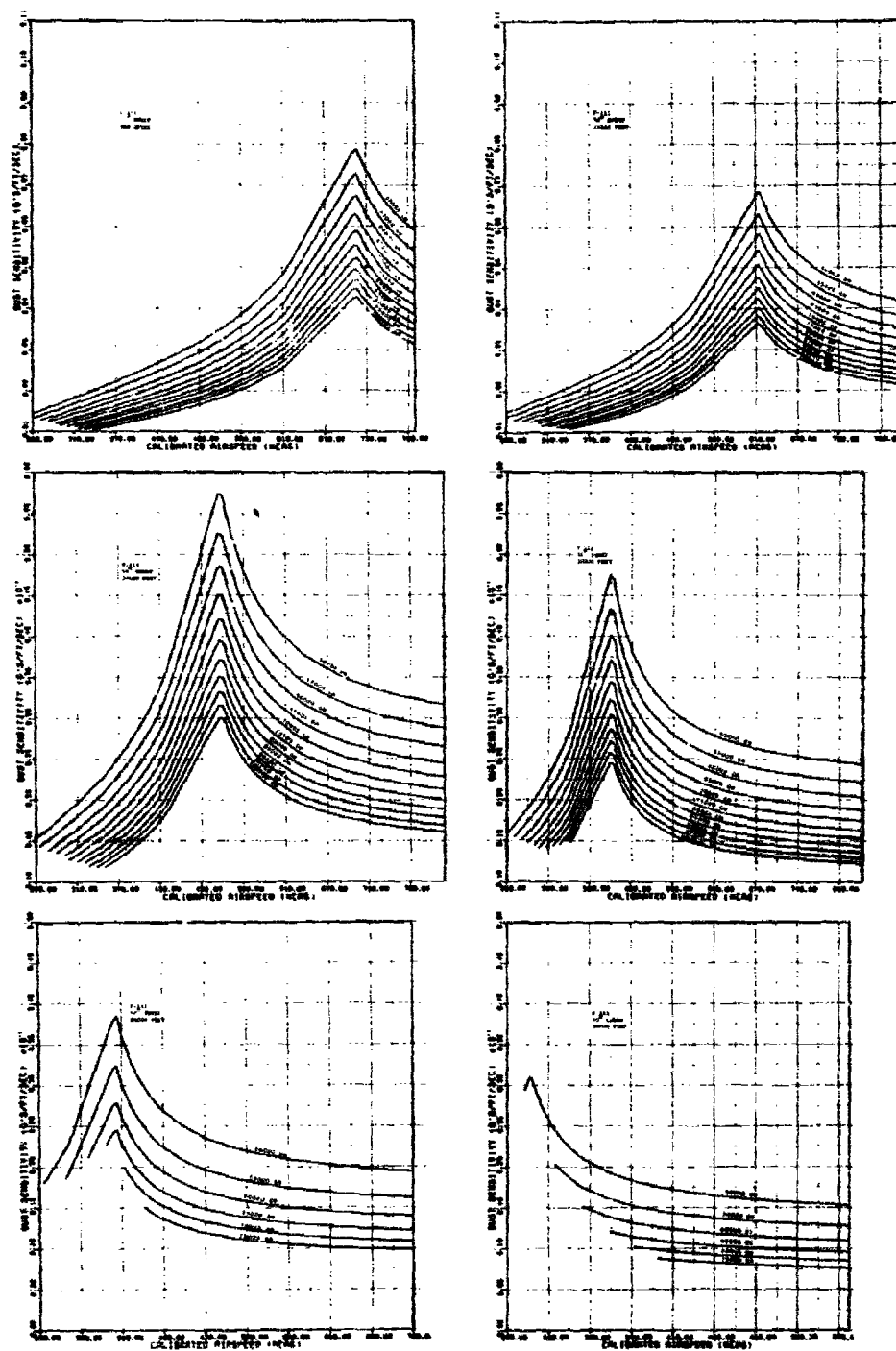


Figure 82. Gust Sensitivity of F-111 @ 50° Sweep

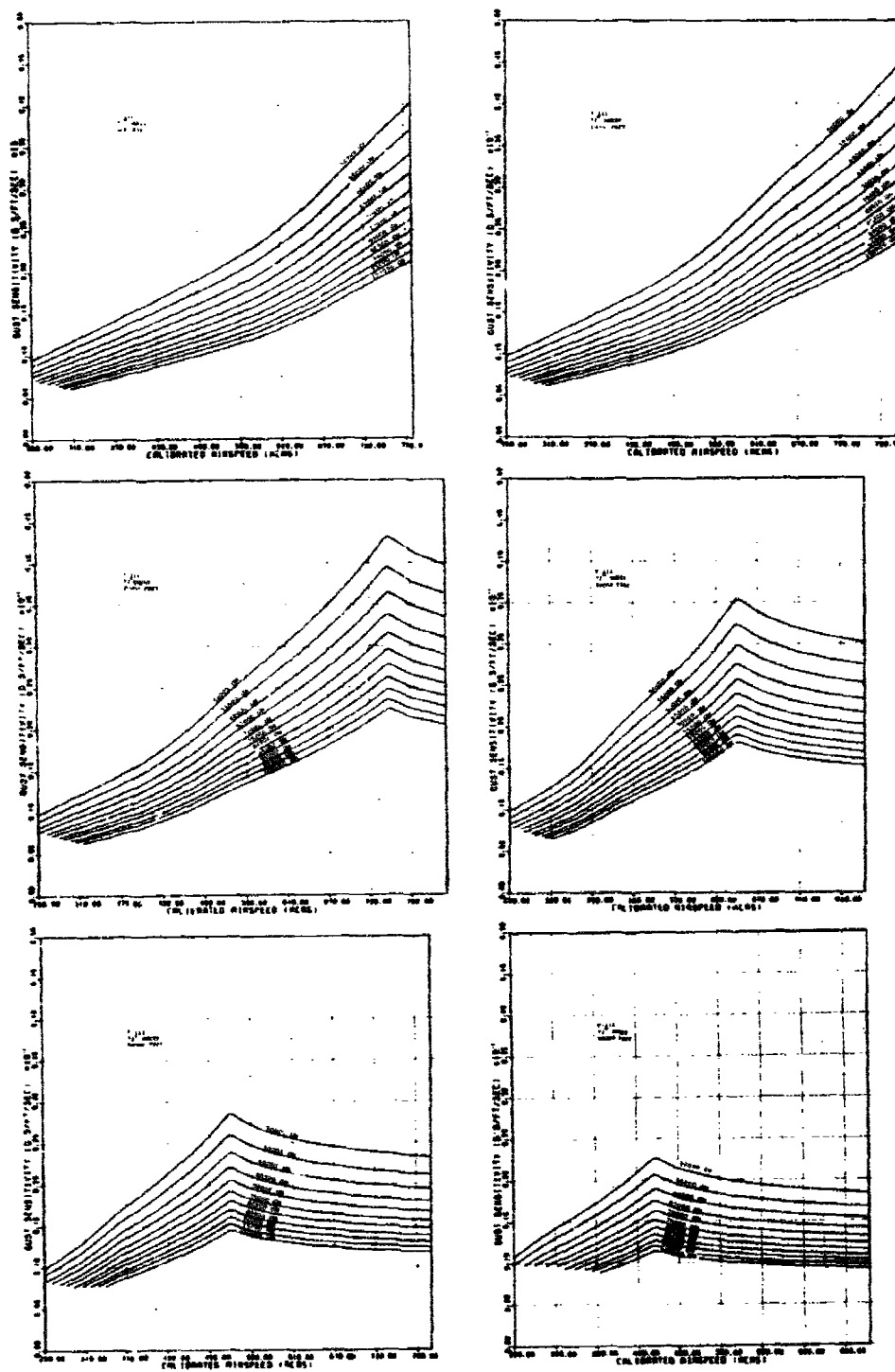


Figure 83. Gust Sensitivity of F-111 @ 72° Sweep

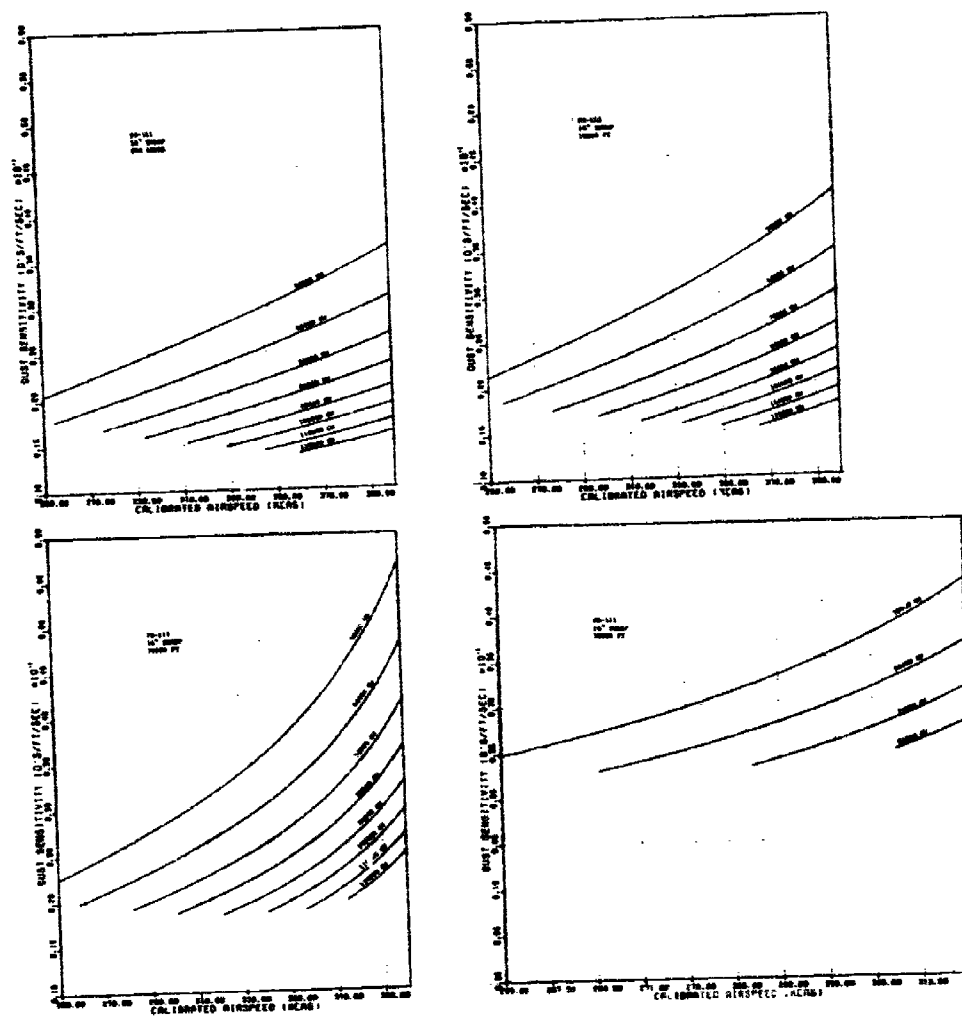


Figure 84. Gust Sensitivity of FB-111 @ 16° Sweep

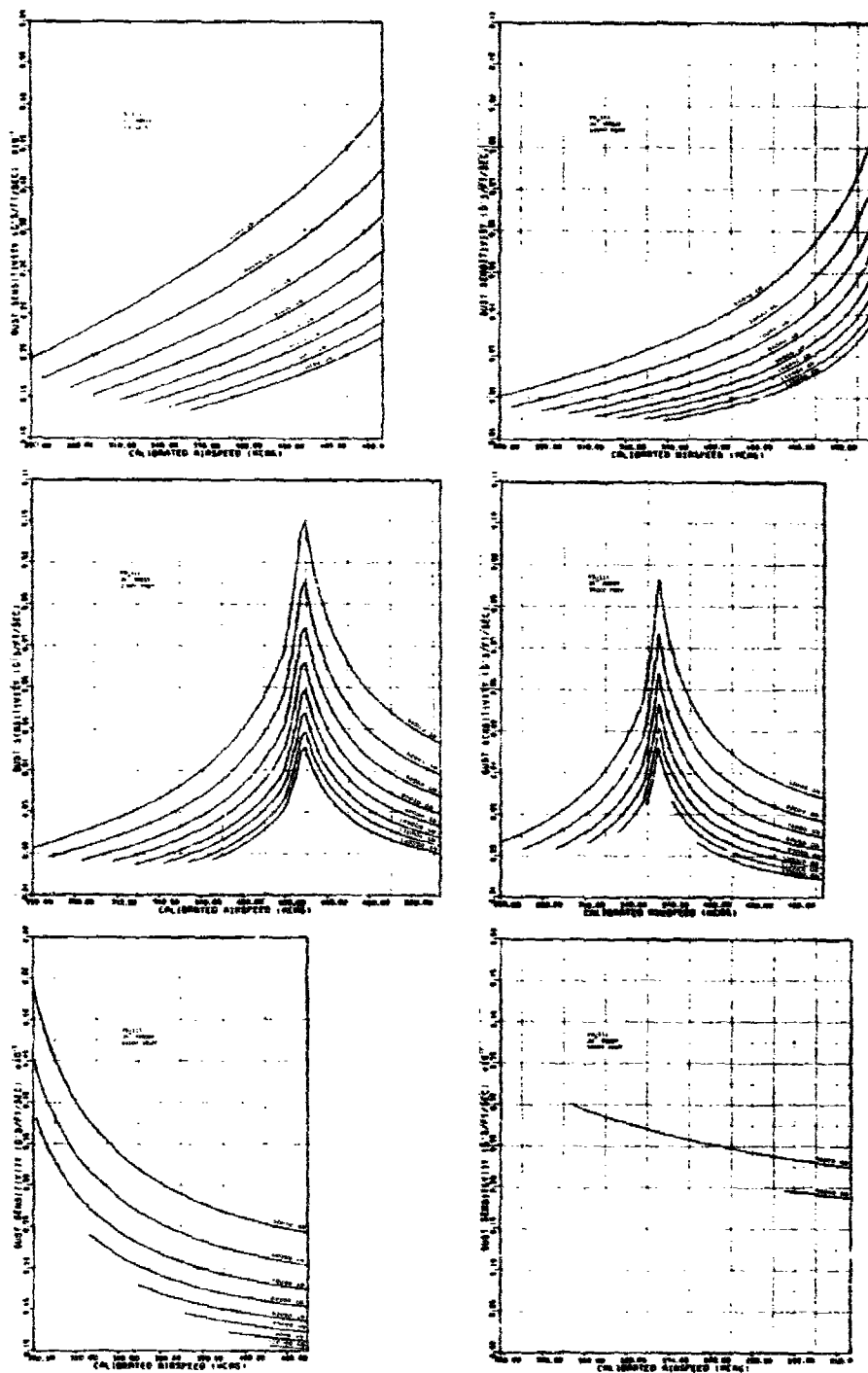


Figure 85. Gust Sensitivity of FB-111 @ 26° Sweep

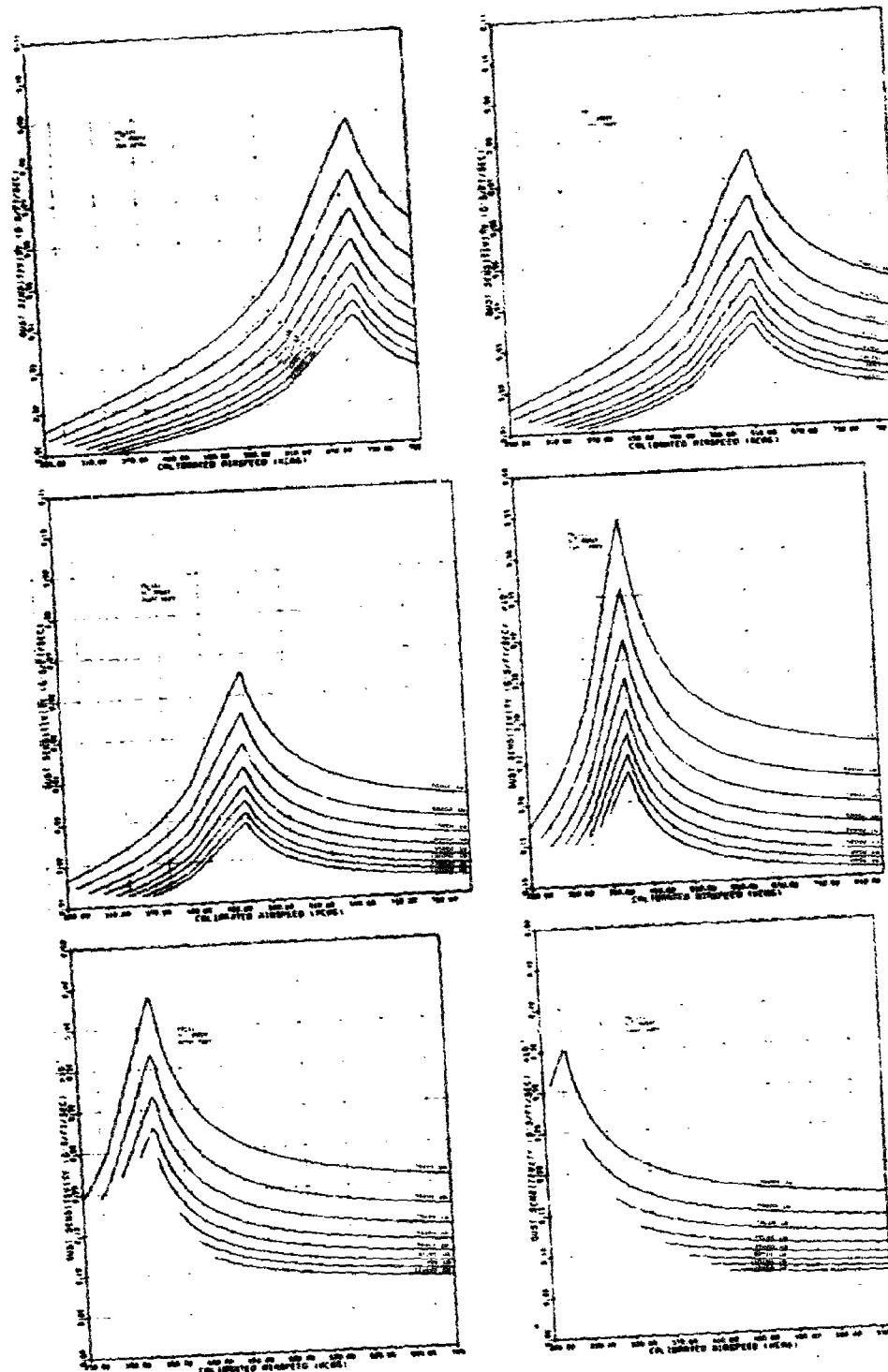


Figure 86. Gust Sensitivity of FB-111 @ 50° Sweep



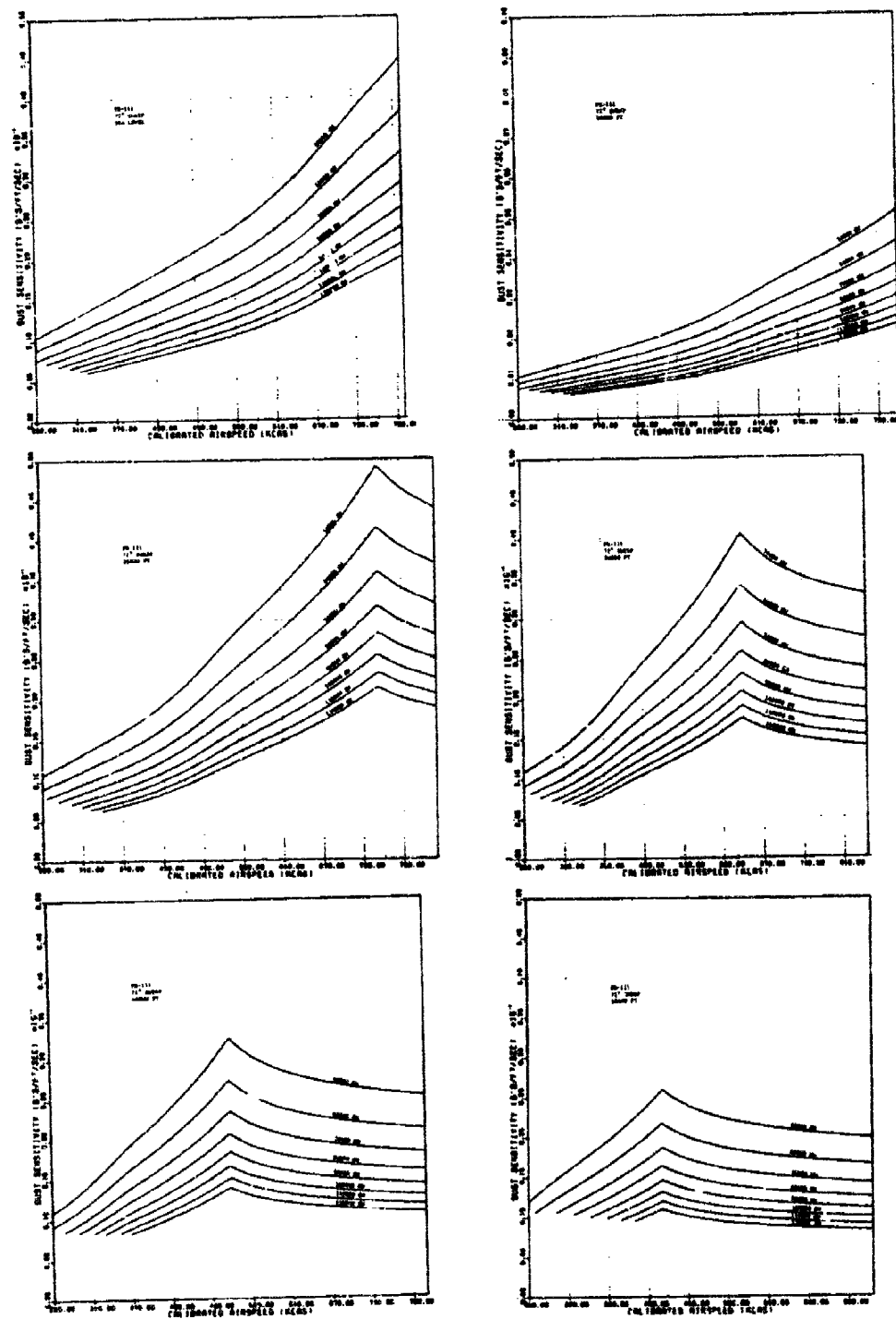


Figure 87. Gust Sensitivity of FB-111 @ 72° Sweep

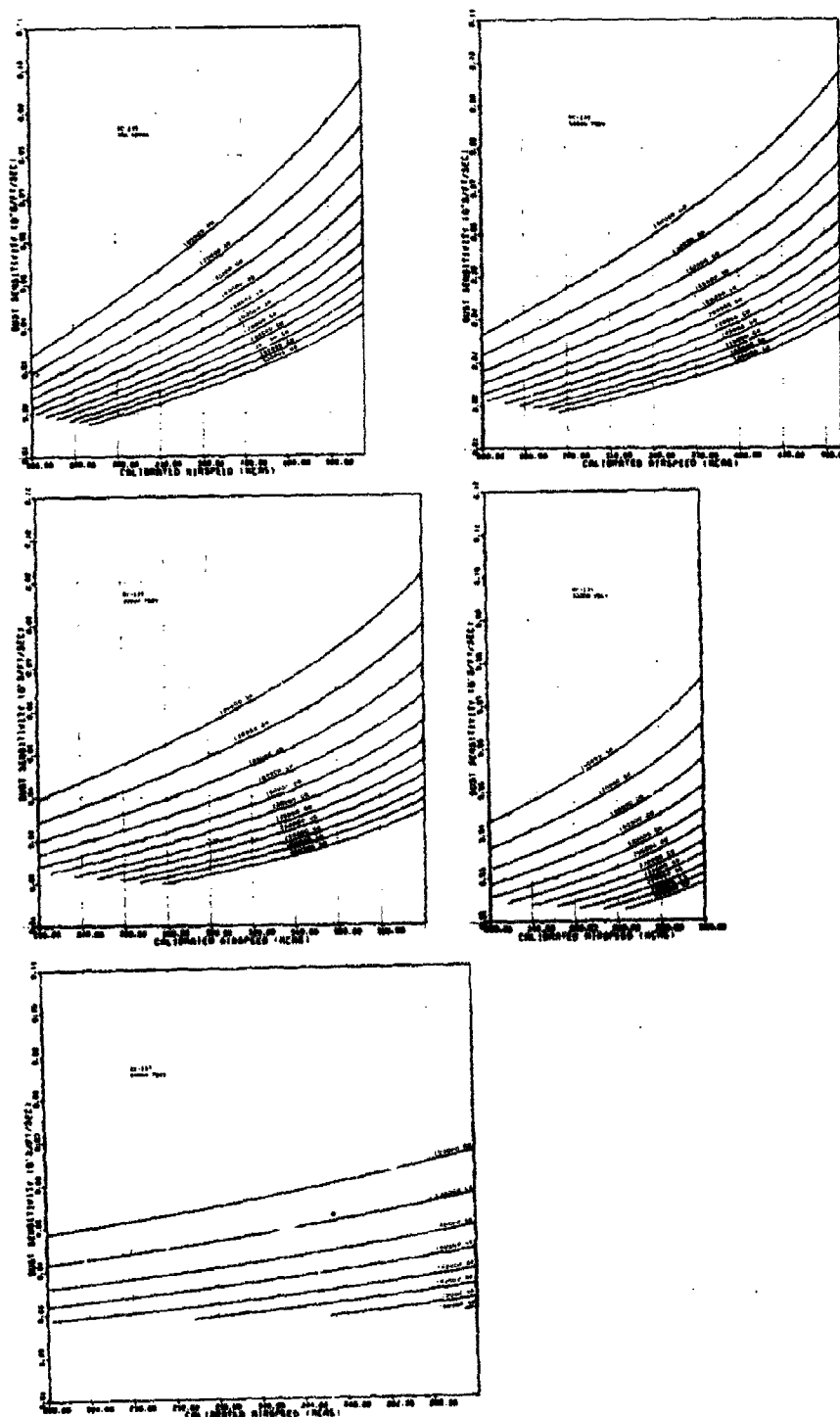


Figure 88. Gust Sensitivity of KC-135

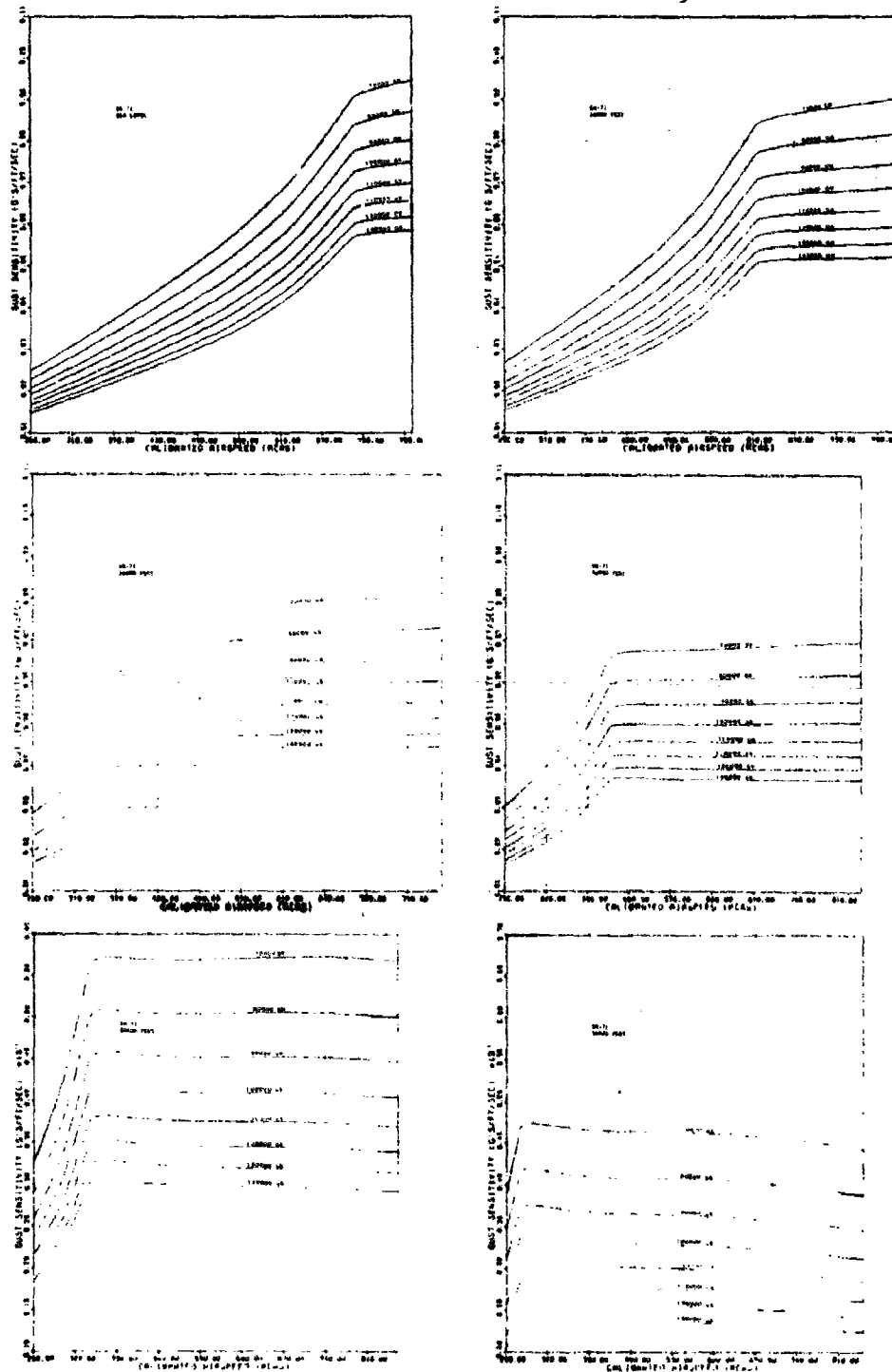


Figure 89. Gust Sensitivity of SR-71

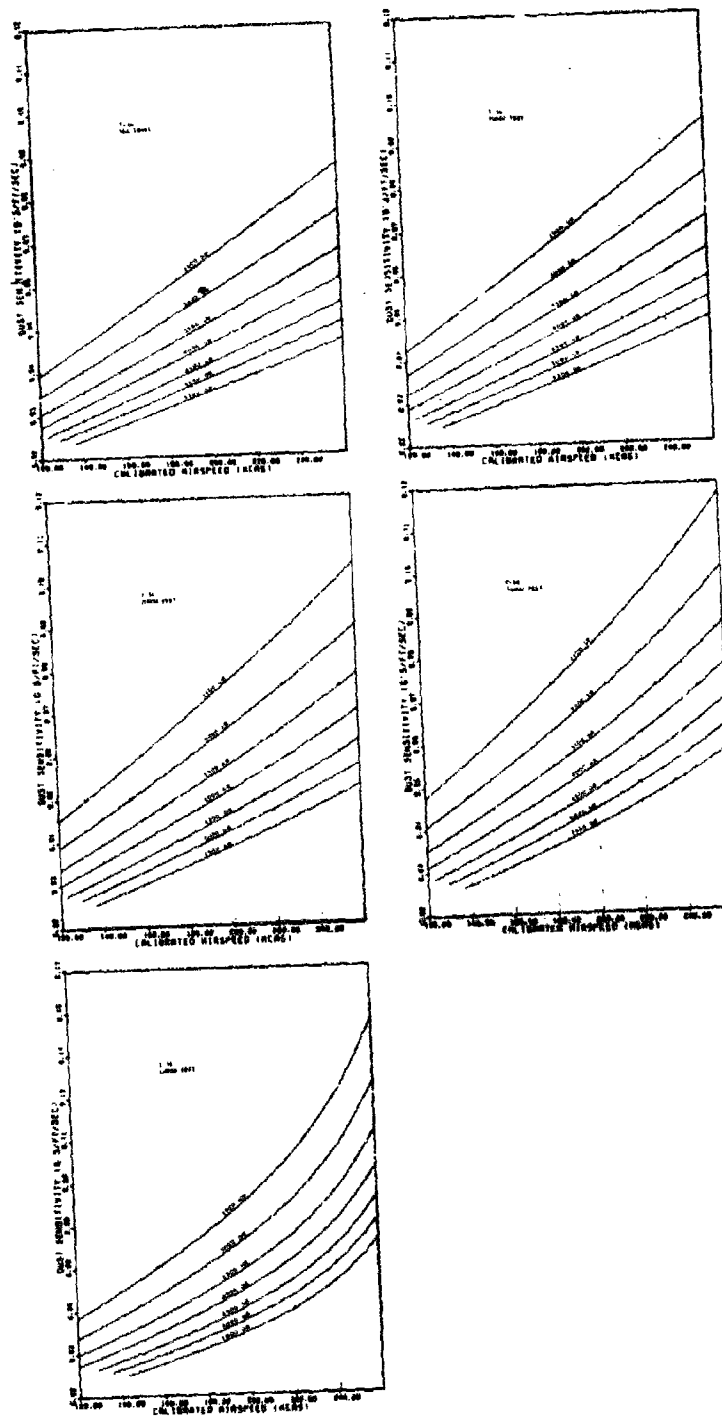


Figure 90. Gust Sensitivity of T-34

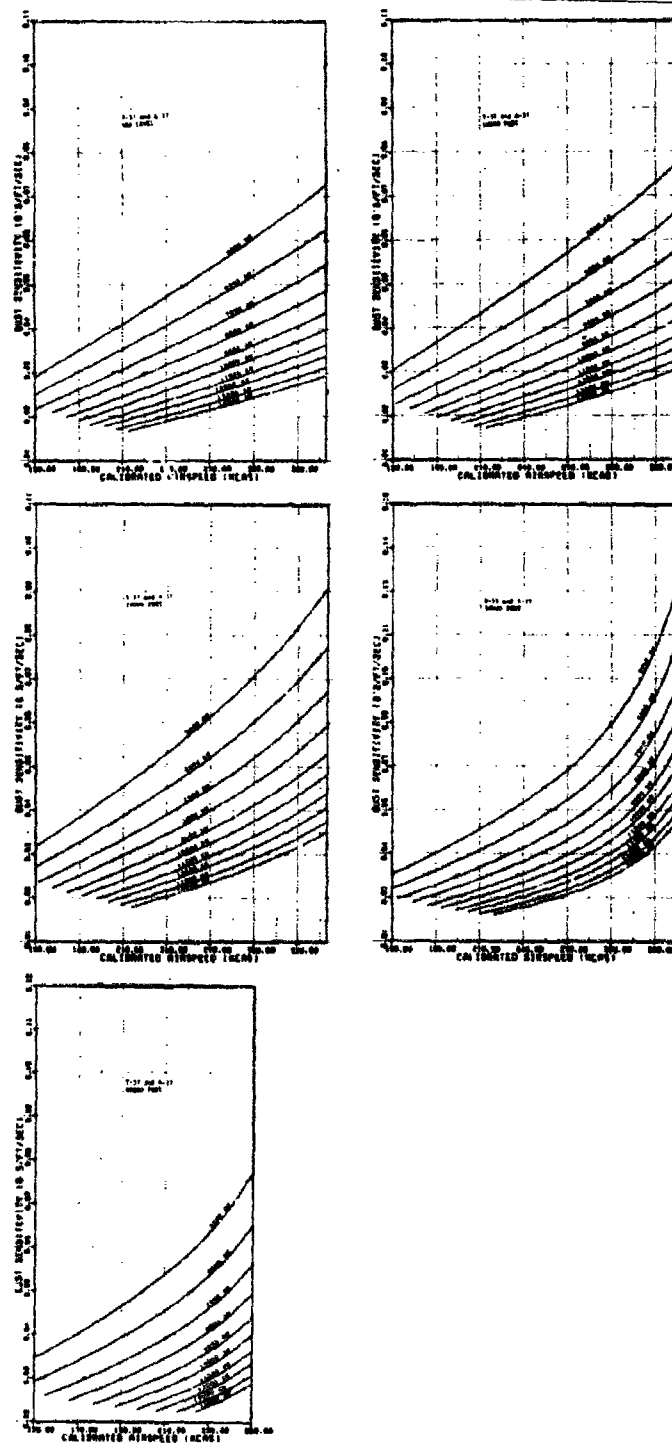


Figure 91. Gust Sensitivity of T-37 and A-37

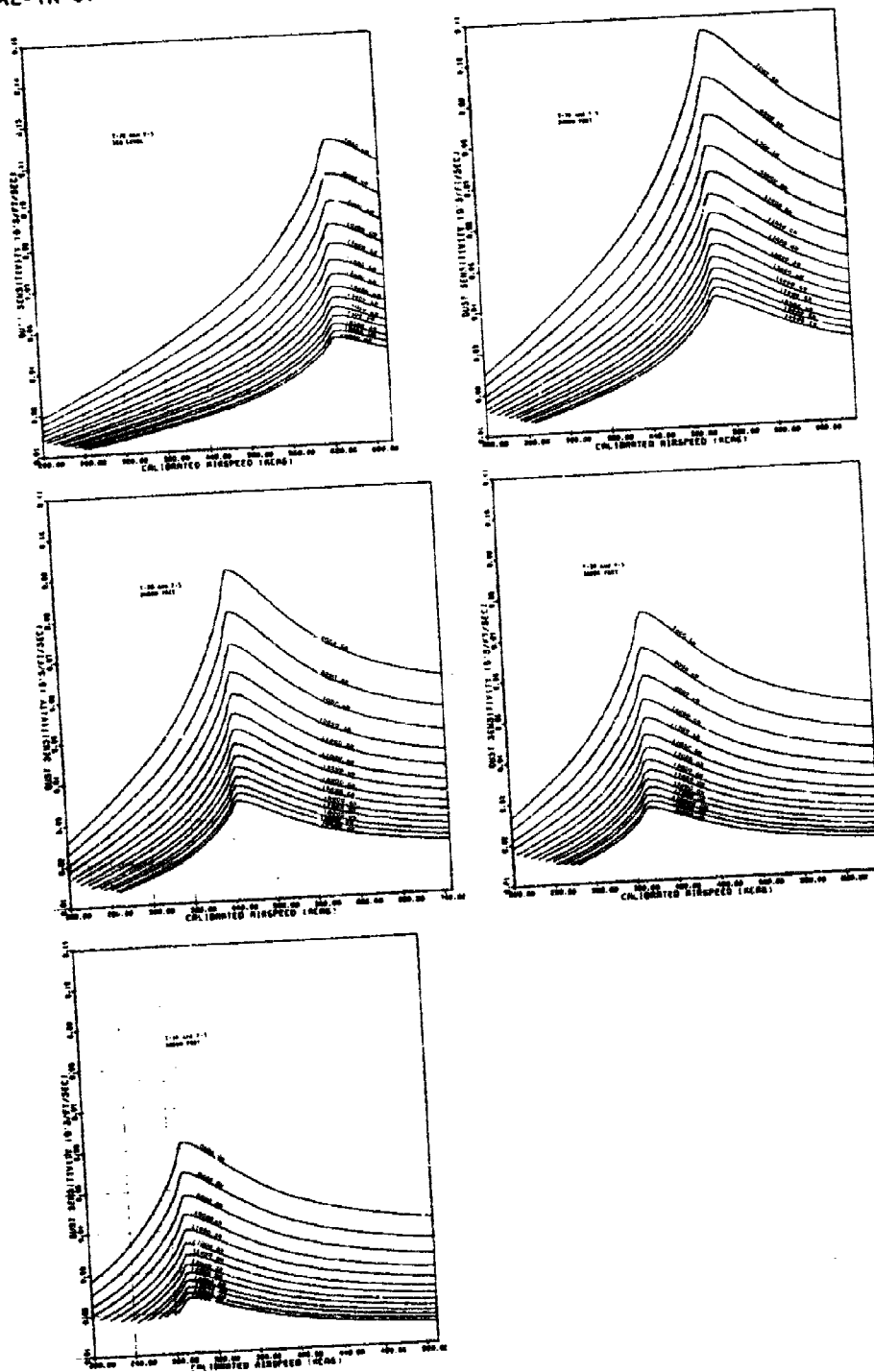


Figure 92. Gust Sensitivity of T-38 and F-5

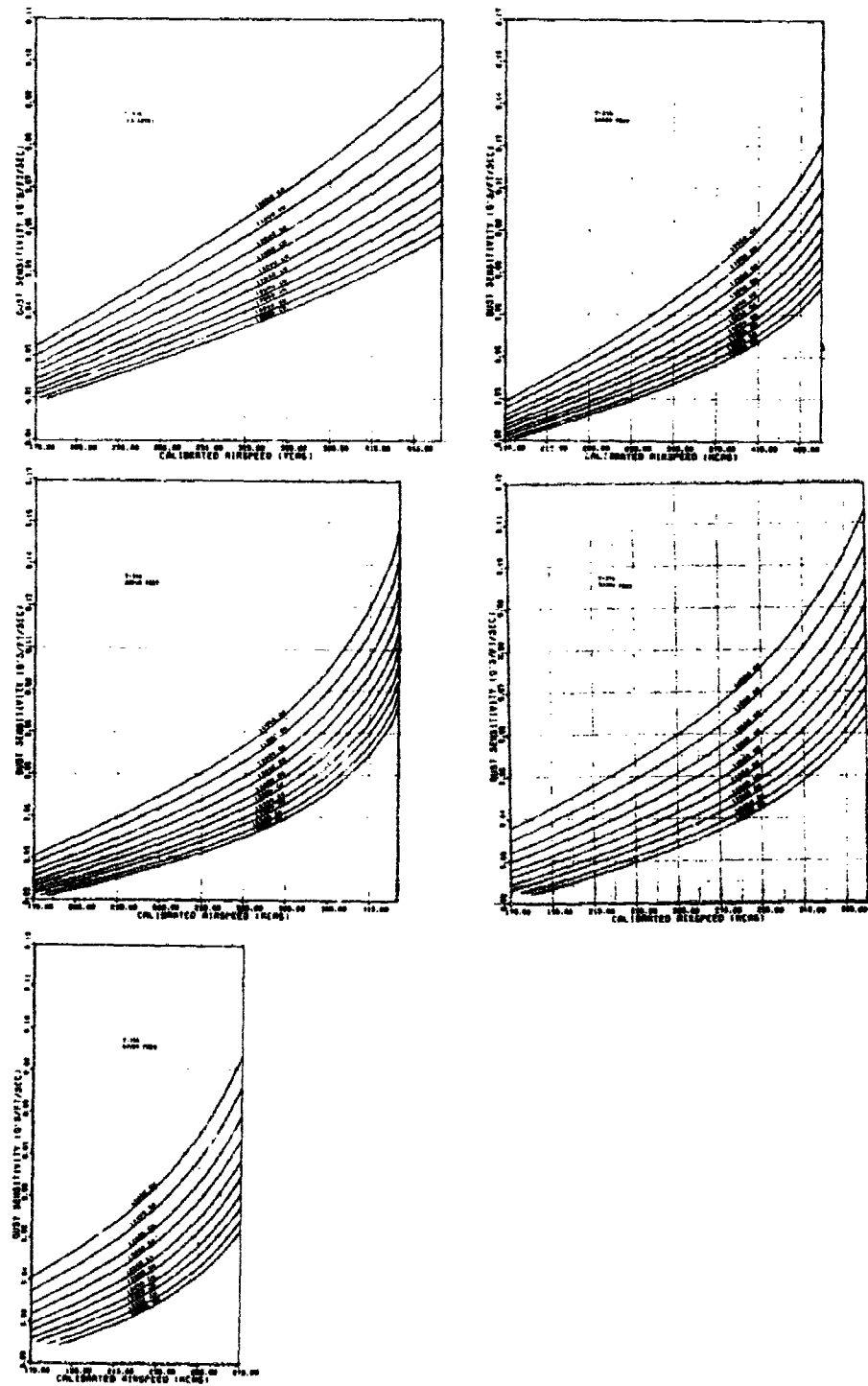


Figure 93. Gust Sensitivity of T-39A

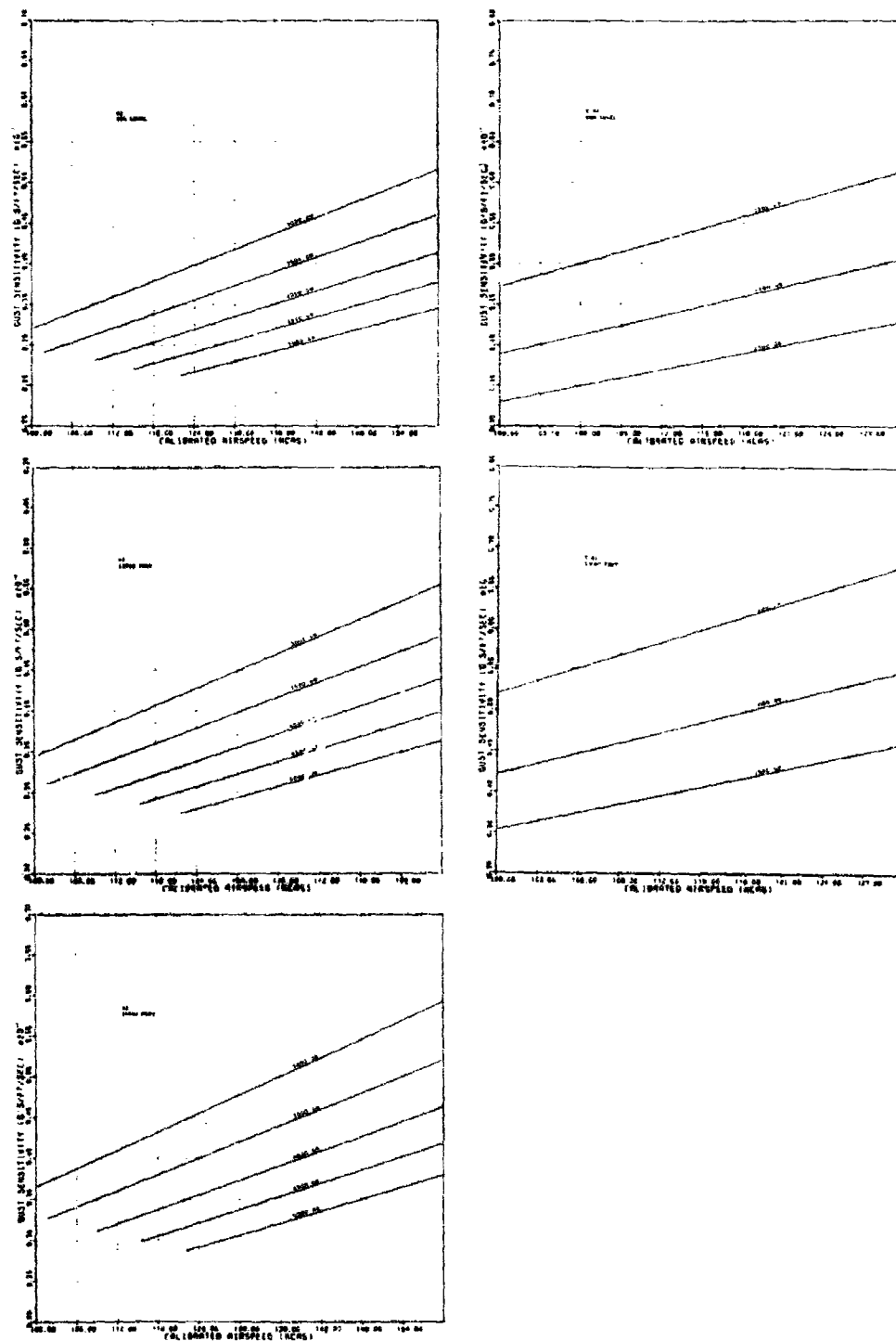


Figure 94. Gust Sensitivity of O-2 and T-41



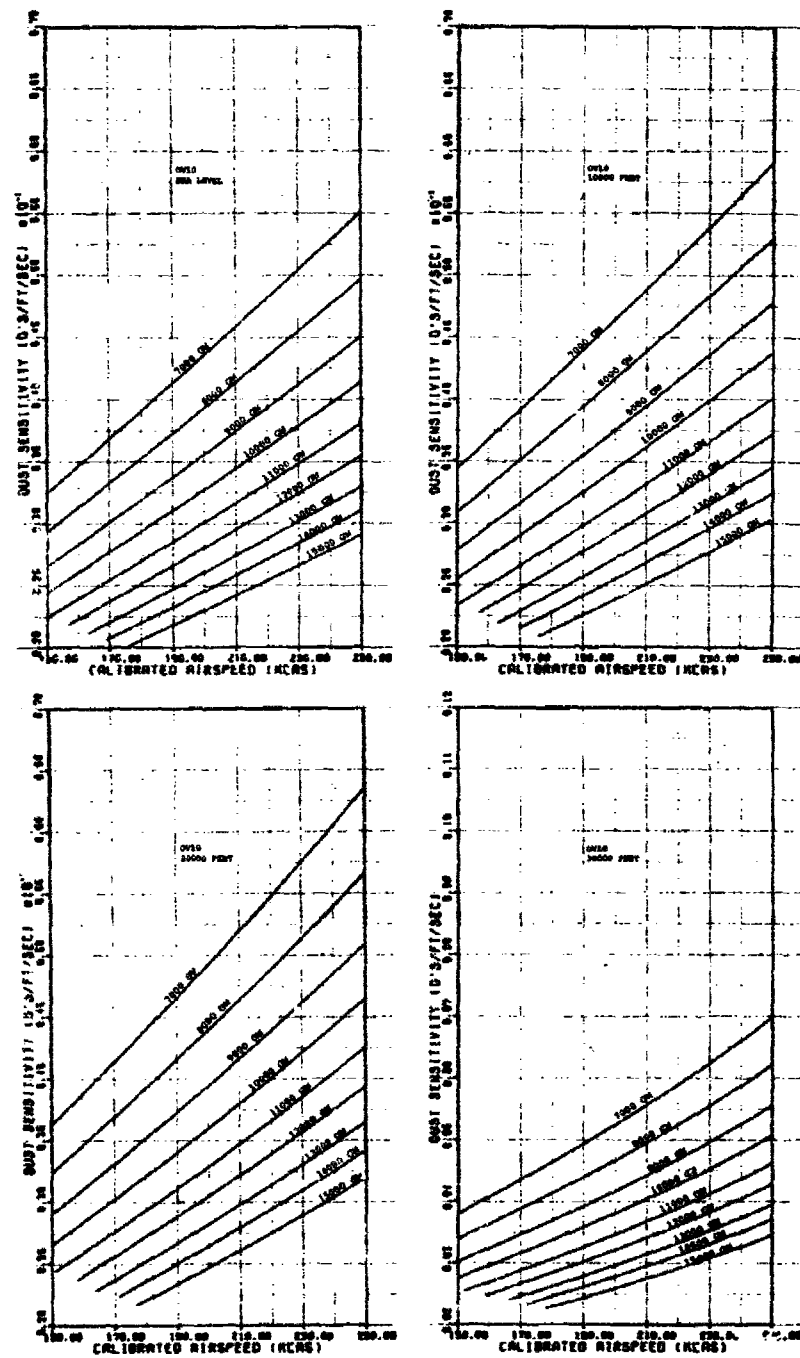


Figure 95. Gust Sensitivity of OV-10

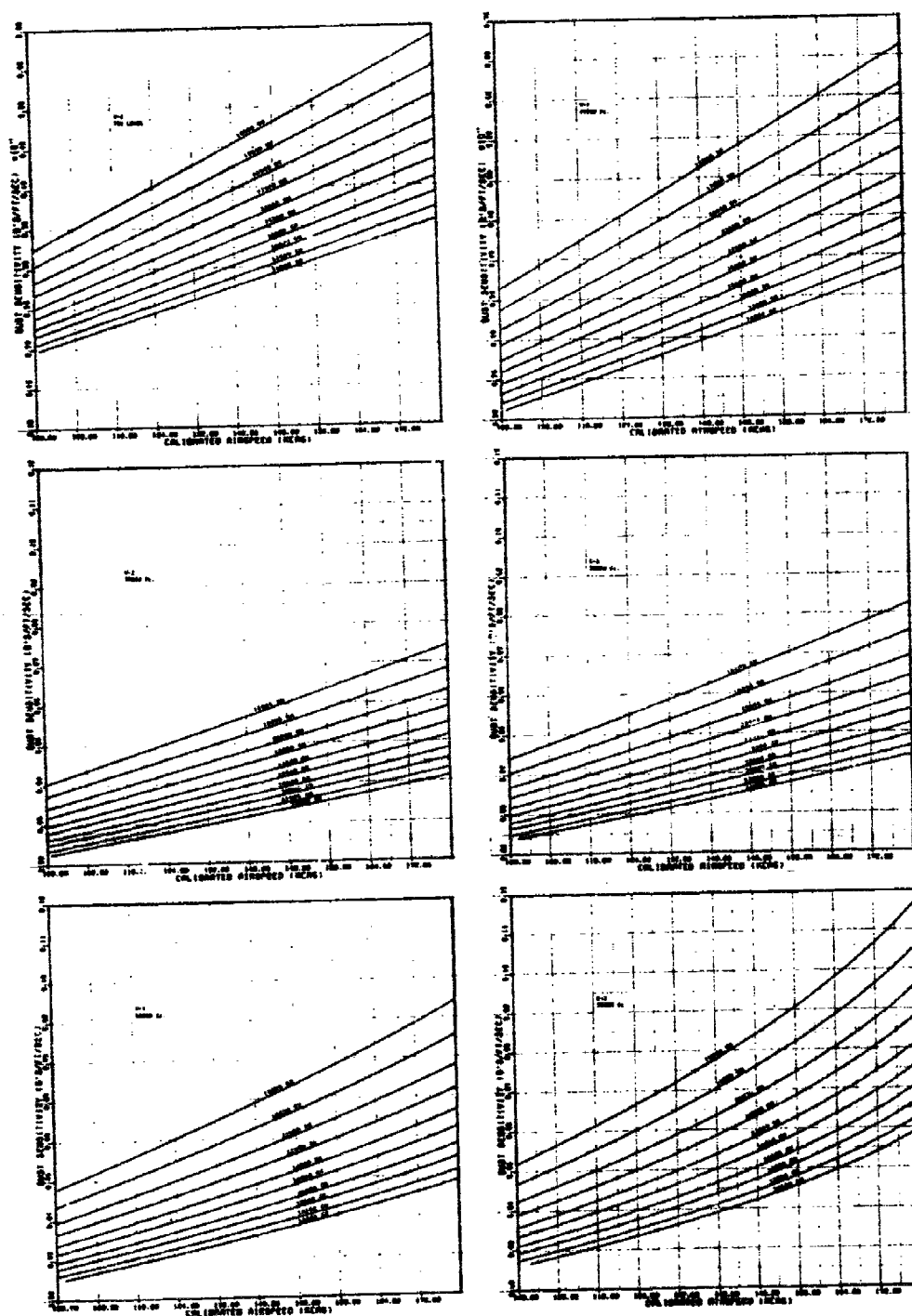


Figure 96. Gust Sensitivity of U-2